

DEPOSITION OF M. L. NEWELL

“Direct Examination

By Mr. Howard:

Q. Will you state your full name, please, and your residence address?

A. My name is Malcolm Lloyd Newell, and I live at 651 West 11th Street, San Pedro, California.

Q. Mr. Newell, by whom are you employed at the present time? A. By Mr. G. Scotti.

Q. In what capacity?

A. As engineer on a commercial fishing boat.

Q. Operating out of San Pedro?

A. That is right.

Q. Do you expect to be in the state of Washington in April—on or about April 6, 1949?

A. No, I do not.”

Mr. Howard: May it please the Court, this witness in the following few lines waives the reading and signing of the deposition. We can start at line 15, [923] page 137.

“Q. Now, Mr. Newell, during the month of November, 1948, did you have occasion to render some service to the Tanker Urania?

A. Yes; I don't recall the exact dates, but I worked for approximately a week on the boat, that is, checking over it and inspecting the main engine, because of trouble that they had enroute.

(Deposition of M. L. Newell.)

Q. And by whom were you employed at that time?

A. I was employed at that time—I was still engineer on the job that I was fishing for, but I was employed then by the Union Diesel at that time; in other words, they contacted me, and then they sent two service men down from Oakland, and they had another service man down here who was also a commercial fisherman, who wasn't able to be there, and so they asked me if I would give them a hand on that job.

Q. Do you hold a Diesel engineer's license?

A. No, I do not.

Q. What is the extent of your experience in the operation of Diesel motors?

A. I have run Diesel engines on commercial fishing boats for the past five years.

Q. Have you had any particular experience with Union Diesel engines? [924]

A. Not particularly, no.

Q. By the way, are you related to Mr. S. W. Newell? A. Yes, that is my brother.

Q. Have you ever worked with the Union Diesel Engine Company at Oakland, California?

A. No, I never have.

Q. What would be your best recollection as to when you first went aboard the Tanker Urania, and where would the vessel be located at the time?

A. I went aboard the Tanker Urania the day and very shortly within the hour after it was towed back

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from Mexico, and that was at the Craig Shipyards in Long Beach, California.

Q. Were you present when the ship arrived at the dock?

A. Yes, I was present when the ship arrived at the dock.

Q. Do you recall who else was present that went aboard the ship at that time?

A. Yes; there was one of the owners, Mr. Antipas, and a service man from the Union Diesel Company, and that was Mr. Charlie Firth, and Mr. Firth is now the chief engineer on the bait boat Mayflower.

Mr. Hokanson: I move that the last part of the answer be stricken as not responsive."

Mr. Howard: That is agreeable, Your Honor.
The Court: It will be stricken.

"Q. (By Mr. Howard): Where is Mr. Firth at this time?

A. I am not positive; in other words, he is either in San Diego or else on fishing grounds. He could be anywhere from San Diego to the Galapagos Islands.

Q. Was there anyone else in attendance at that time?

A. I don't recall exactly at that time, but I know from inquiring that there was a man from, I believe it was, the Texaco Oil Company; I can't recall his name, however.

(Deposition of M. L. Newell.)

Q. What were your particular responsibilities in connection with the difficulties on the main engine?

A. Well, my instructions from my brother were that they wanted to go over the engine thoroughly for any mechanical defects that might have caused the boat to break down in operation.

Q. State what condition you found the main engine to be in when you first went aboard the vessel when she arrived at Long Beach.

A. When we first went aboard the vessel at Long Beach, the engine had not been—that is, everything was still on the engine, and they hadn't started any work at all on it, and whether it would operate or not, I don't know.

Q. Was the engine being used as it came into port? [926]

A. When it came in, I don't know. I wasn't aboard. But at the time it arrived at the dock the engine was not running.

Q. What did you do when you first went aboard? Just tell us.

A. The first thing we did when we went aboard when she was docked was to open the base plates and inspect the crankcase.

Q. And in what condition did you find the crankcase?

A. We found the crankcase—that there was no indication of wear of anything there, such as if a bearing had been burned out, but the oil appeared to be contaminated.

Q. How much oil was there in the crankcase?

(Deposition of M. L. Newell.)

A. There was practically no oil in the crankcase. Those engines have a dry crankcase. All of the oil is pumped from the crankcase into the day tank, so they have a dry space in that type of engine, but there was oil in parts that don't drain; in other words, you might get oil for samples from that.

Q. Then what other parts of the engine did you inspect?

A. I inspected the thrust bearing. It is a Kingsbury thrust on that particular motor or engine, and I found that to be in—that is, it was in as perfect alignment as you could expect, and there was no indication of misalignment there.” [927]

Mr. Hokanson: “There was no indication of misalignment there”—I move to strike the last part as not responsive. The first sentence of the answer is responsive, but the rest is not.

Mr. Howard: That is agreeable; he answers it in the next question.

The Court: It is stricken.

“Q. There was no damage found in the thrust bearing?

A. No damage found in the thrust bearing, no.

Q. Did you examine any other parts of the engine?

A. Yes; I myself put a test on the engine, which—in other words, we suspected water in the lubricating oil, and we put a test on the engine by seal-

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ing the makeup water tank; in other words, that is a fresh water cooler at the engine, and it has a fresh water make up tank on the main deck, and that carries a little heat to the water, and I plugged up the discharge of that makeup water tank and turned the full fresh water supply—I don't know what poundage it was, but I believe it was approximately 45 pounds pressure—and so with the base plates off and with that much pressure in the engine, it would give us—that is, it would show us any leaks that you might have under normal operating conditions.”

Mr. Hokanson: I move to strike all but the first part of his answer as not responsive.

The Court: All after the word “Yes”?

Mr. Hokanson: Yes.

Mr. Howard: I submit that is an objection that should have been raised at the time of the examination, and not at this time.

The Court: Because it relates only to form, is that your idea? Objections other than as to form are reserved, are they not?

Mr. Howard: The form of the question and the answer not being responsive.

Mr. Hokanson: That is not included in the stipulation, Your Honor, and if the witness goes on at length in answering the question I submit it is not.

The Court: Well, what is the nature of the answer? It simply describes what he did.

(Deposition of M. L. Newell.)

Mr. Hokanson: It goes on. I didn't complete reading his answer, apparently.

The Court: In the first place, I do not see any prejudice because it only tells you and the Court what he did in order to make his investigation. It is not saying that somebody was libeled for what he found or something like that, is it?

The objection is overruled. It seems to me to be merely an explanation that might not have been necessary of what he did and how he went about his job.

“And we found in No. 5 cylinder a slight leaking; in other words, it was very slight at that pressure; and as I recall it was about, oh, maybe 10 drops of water a minute, if that much.

Q. Now, where was this leak?

A. That was over No. 5 cylinder.

Q. Whereabouts?

A. Well, with the base plates off, all you could do was see it running down the side, and so we took out the lines that run into the cylinder wall from your lubricator—it is a Manzel lubricator.

Q. And what is that, a Manzel lubricator?

A. A Manzel lubricator is a lubricating box which by pressure feeds a small amount of oil to any given part of the engine. Each cylinder has two lines from the Manzel oiler, and they are external lines that help to lubricate the walls of the cylinder, and one of those external lines that comes

(Deposition of M. L. Newell.)

through the water jacket into the cylinder wall was leaking. In other words, there wasn't a proper seal on the copper gasket.

Q. Who was with you when you made that test?

A. I showed it to the chief engineer on the boat and to the other service man, Mr. Cross, who was the service man for the Union Diesel Company and who was on board the boat, and I don't recall who else I showed it to, but I made another gasket and put in or replaced that fitting that goes through the cylinder wall, and put it through the test, and it didn't leak after that.

Q. Do you recall whether Mr. Pike, of the American Bureau of Shipping, was present when you discovered that?

A. I don't recall whether he was there or not. I am pretty sure I told him about that, because he was around there and was very much interested.

Q. How did you discover that the gasket was bad?

A. I took out the fitting, and it is a soft copper gasket, and I could see that the upper halves of it were shiny. In other words, from the effect of screwing in that fitting. And then there was carbon on the lower part, showing that the fitting wasn't getting the proper seat against the gasket.

Q. And what effect did that have on the leakage of water?

A. Well, that would give you a slight amount of fresh water into your lube oil. I say slight, be-

(Deposition of M. L. Newell.)

cause this is merely my opinion. In other words, you can't tell exactly from a static pressure test how much it is going to be [931] leaking in actual operation.

Q. Did you relate that gasket to the water that you found in the cylinder?

A. Yes, to that particular part that was in the cylinder there.

Q. Did you find any other leaky gaskets?

A. No, that was the only leak from the engine itself.

Q. Now, just what was the condition of that gasket?

A. The gasket was—it retained the original shape—but part of the gasket was shiny and part of the gasket was black from carbon. That is what I would imagine it would be from.

Q. How thick was the gasket?

A. Oh, not more than a thirty-second of an inch.

Q. Was there any unevenness in the surface of the gasket?

A. No, there was no unevenness; in other words, nothing that I noticed, and we didn't lay it down or anything like that.

Q. Did you yourself replace that gasket?

A. Yes. I made a gasket out of a piece of copper because they didn't have any aboard, and we wanted to make a test of it, and so I made a gasket myself, and that would be on the No. 5 cylinder on the starboard side of the engine.

(Deposition of M. L. Newell.)

Q. Did you inspect any other parts of the engine? [932]

A. Yes; we inspected the—I think it was one of the main bearing shells, and also one of the crankshaft bearings.

Q. What did you find as to their condition?

A. We found their condition to be satisfactory. There was the presence of water behind the shells. In other words, the shells on the main bearing—that is not on connected bearings—but behind the shell there was water.

Q. Was that a normal condition?

A. No, that was not a normal condition, but the amount there would be dissipated in time and wouldn't cause any trouble.

Q. Would you state, please, on exactly what bearings, behind what shells, you found this water, if you can recall?

A. I think it was No. 6 main bearing.

Say, could I change something I said in my previous testimony? I was going on the wrong end of the engine. So instead of the No. 5 cylinder about which I previously testified, that should have been the No. 2 cylinder that had the leaky gasket.

Q. You were getting on the wrong side of the engine, were you?

A. Yes, I was on the wrong side of the engine.

Q. Then your previous reference to the leaky terminal and the gasket would be in regard to No. 2 cylinder? A. Yes. [933]

(Deposition of M. L. Newell.)

Q. And you wish to correct your previous statements relating to No. 5 cylinder, which should now be identified as No. 2 cylinder?

A. Yes. When I said No. 5 cylinder I meant No. 2 cylinder.

Q. Did you find any water on the thrust bearing?

A. No, there was no water in the thrust bearing. The thrust bearing has its own oil supply. In other words, it isn't lubricated by the same supply that lubricates the main engine. There is a tube or a pipe in the thrust bearing, so we took that apart and checked everything, and I cleaned out the thrust bearing, but there was no fissure present or any water there.

Q. Now, what other parts of the main engine did you examine?

A. Well, let me think a minute. We took off the heat exchangers, and my brother gave me the address, that is, he looked up to see who did the service work for the Harrison radiator, and I took in three heat exchangers, two for fresh water coolers and one for lubricating oil cooling, and I took those to the United Service in Long Beach, and they were to be cleaned and inspected and tested.

Q. Who removed the heat exchangers?

A. The crew of the boat removed them.

Q. That was after you arrived on board? [934]

A. Yes, that was after I arrived on board the ship.

(Deposition of M. L. Newell.)

Q. And did you personally take the heat exchangers?

A. Yes, I took them to the United Service at Long Beach.

Q. Were you present at the United Service shop when the heat exchangers were opened up?

A. No, I wasn't present when they were opened.

Q. Did you see the heat exchangers after they were opened up? A. Yes.

Q. Where were they then?

A. They were at the United Service shop, because I left them there and came back to the boat, and then I went back to the United Service again.

Q. Was it the same day that you did that?

A. No; the following day.

Q. You went back the following day?

A. I went back the following day, yes.

Q. Before the heat exchangers had been taken off the ship, had they been opened up in any way?

A. No. In other words, the only dismantling of the heat exchangers necessary to remove them from the piping of the ship was the unbolting of the flanges and taking them out as units.

Q. State what you observed as to the internal condition of the heat exchangers when you went back to the United [935] Service shop the following day.

A. When I went back to the United Service shop the following day, they were ready to test the heat exchangers. They had opened the heat exchangers

(Deposition of M. L. Newell.)

and had taken them apart. That means that they had taken the two end plates off of each heat exchanger, and they had boiled them in their solution that they use for cleaning radiators.

Q. And was the test run in your presence then?

A. The test was made in my presence, yes.

Q. And what did you observe during the test?

A. During the test the heat exchangers were immersed completely in the water and air pressure applied to the core of the heat exchanger.

Q. When you refer to the core, Mr. Newell, can you identify that a little further for us?

A. Well, I refer to the core—and I had better explain the type of heater. It was a Harrison heater, and that has a very compact heat exchanger and secured with a honeycomb core that is encased in a cast bronze casing, and the core is soldered or sweated into the casing.

Q. What do you mean by sweated into the casing?

A. That is the same as being soldered.

Q. And does the core refer to the tubing that the lubricating oil passes through?

A. That refers to the tubing that the lubricating oil [936] or fresh water passes through, yes. In other words, they pass through the honeycomb tubing and the water, that is, the salt water circulates around the outside of that, and the air was applied to where the salt water would be circulating through.

Q. And what, if anything, did you observe then?

(Deposition of M. L. Newell.)

A. I observed that there were a lot of leaks around the edge of the honeycomb core, right in the line of the solder marks where it was soldered into the casing. There were no leaks in the tubes themselves, but only around the edge of the tubes where they were soldered into the casing.

Q. Now, was this on the lubricating oil cooler or was it on one of the water coolers?

A. It was on all three of the coolers.

Q. Did the same condition exist on each of them?

A. The same condition existed on each of them and also on both ends.

Q. And how did you determine that there were leaks during this investigation?

A. I determined there were leaks because the cooler was completely submerged in water and there was air applied to the inside, so that there were bubbles coming up, and you could see where the bubbles came through the casing.

Q. After the coolers were removed from the water bath, did you make any further examination?

A. I examined the coolers for any sign of electrolysis, and there was no indication of electrolysis; and I examined the zinc plates that are put in each cooler to control electrolysis, and there were about—I would say approximately thirty per cent of the metal of the zinc left, and so I had those replaced.

Q. Were these leaks that you have referred to during the water and air test observable to the naked eye?

(Deposition of M. L. Newell.)

A. No, they were not observable to the naked eye.

Q. Visually you couldn't see them?

A. No, you couldn't see them.

Q. What arrangements did you make, if any, with the United Service Company?

A. Well, when I saw the leaks there, I asked them what, in our opinion, could be done about it, whether we should get new heat exchangers or not, and they said there was no reason for getting new heat exchangers, that their service man could repair them; and so I stood by while he repaired them and while the tests were made.

Q. How did he indicate where the leaks were?

A. He indicated the leaks by marking opposite where the air came through the jacket or through the core.

Q. Who was present during the time this test was made?

A. The service man, or the repair man, for the United Service Company. [938]

Q. Was anyone else present at the time?

A. Part of the time one of the service men of the United Service Company, who installs the radiators, was around, but he wasn't there all of the time.

Q. Were the repairs thereafter accomplished by the United Service Company? A. Yes.

Q. How long did it take?

A. Approximately a day—say eight hours.

(Deposition of M. L. Newell.)

Q. Did you return to the United Service Company after that?

A. Did I return? No, I picked up the—I don't recall whether it was the same day or the next day that I brought the heat exchangers back to the boat, but since then I haven't been back to the United Service Company.

Q. You did return to the boat?

A. I returned to the boat, yes. Of course, I paid for the work and returned the heat exchangers, and I gave them the bill and was reimbursed by the Union Diesel Engine Company."

Mr. Hokanson: I move to strike the last part as not responsive.

The Court: I think that it should be stricken.

Mr. Howard: It is not responsive, Your Honor.

The Court: It is stricken.

"Q. Do you recall what the charge was?

A. Let's see if I recall. I believe it was—I believe it was about \$140. However, I can't be too sure on that. In other words, I don't remember, but that was approximately the charge.

Q. Was there a test made, any subsequent test made, on the heat exchangers at the United Service shop, before you turned them in to the vessel?

A. Well, they were tested after they were repaired. In other words, the service man would

(Deposition of M. L. Newell.)

mark the leaks and go ahead and solder them, and then put them back in the bath and test them again, and so when we finally found no leaks they were assembled and returned to the service man, and no other tests were made after that.

Q. Who reinstalled the heat exchangers on the boat?

A. Mr. Cross, Mr. Firth, and myself reinstalled them.

Mr. Howard: That is all. You may cross-examine.

Cross-Examination

By Mr. Hokanson:

Q. Mr. Newell, the core of the cooler that you have referred to is sweated into the casing on each end where [940] the lube oil comes in and goes out; is that correct?

A. No, I believe it is sweated on the ends where the water—that is, where the salt water goes in and out.

Q. Well, on the other side—in other words, the casing is really a chamber in which the core is contained, and it is only sweated in on two ends; is that correct? A. That is correct, yes.

Q. And when you remove the flange on the lubricating oil side, can you look into the chambers through which the lubricating oil runs?

A. You can look through part of it; you can't see all of it, but you can look through part of it.

Q. Now, on the salt water side can you see

(Deposition of M. L. Newell.)

A. The pressure we used for the test was higher than the pressure they had in the shop, yes.

Q. Do you know how many leaks there were in the lubricating oil cooler?

A. I think there were 13 leaks.

Q. Would that be in the lubricating oil cooler?

A. In the lubricating oil cooler there were six on one side and seven on the other. [943]

Q. And do you remember how many leaks there were in the other coolers?

A. Not exactly. They were all approximately the same, though.

Q. Could you give me any idea of the flow of the leaks in each case.

A. Well, we had no way of measuring the flow, but through most of the leaks there was a steady stream of bubbles, which would indicate quite a bit of leakage. In other words, like I say, we had no way of measuring it, and in operating conditions on the boat it depends on the pressure on each side of the heat exchangers how much leakage you are going to have.

Q. Do you know what the pressure was on this cooler—the operating pressure on the salt water side?

A. No, I don't. I don't know what the normal operating pressure was on that.

Q. What method is employed in this exchanger, if you know, to take care of the shrinkage of coils by reason of the heat?

(Deposition of M. L. Newell.)

A. There is none. Your differences of heat are so slight that in ordinary operation there wouldn't need to be any.

Q. In other words, the core of the cooler is sweated into the casing on two ends? [944]

A. That is right.

Q. And does not admit of any constriction or expansion in the core of the cooler itself?

A. No.

Q. So that if you would establish such differences in heating as would affect the natural expansion and contraction, it might conceivably break or disconnect the point where the solder is; isn't that correct?

A. Oh, if you go to extremes; but I don't believe myself that in normal operation there would be anything of the sort.

Q. Could you, by dropping these coolers, fracture your sweated joints?

A. Not without there being some evidence on the outside of the bronze casing, because those are very heavy casings. In other words, you wouldn't drop it and fracture it without denting it and showing something on the outside.

Q. Would you by constant vibration effect a fracture?

A. I don't know. I don't believe so, however.

Q. What, then, in your opinion, would be the cause?

A. I think, knowing some of the history of that

(Deposition of M. L. Newell.)

vessel, I think this freezing might really have caused it.

Q. Well, excluding that as a possible cause, are there any other causes that might bring out leakage at those points?

A. No, I can't picture or imagine anything that might cause it. In other words, electrolysis might, but there [945] were no indications of electrolysis in the heat exchangers. In other words, if there is electrolysis, it would show up elsewhere, and when they were resoldered there was no sign whatever of electrolysis.

Q. What is electrolysis?

A. Electrolysis is the eating away of the metal caused by the action of salt water on metal. In other words, it is a galvanic action; a current set up by two different metals, and one metal may carry away from the other—whichever metal is more readily reacted upon. That is why zinc plugs or plates are put into these heat exchangers, because your zinc reacts to the electrolic action more than plates of bronze or admiralty metal. I don't know what the exact computation or percentage is, however.

Q. Is there any particular procedure for installing the cooler on the engine?

A. Yes; in other words, the cooler has to correspond with your salt water and your fresh water and your lubricating oil lines; that is, we merely unbolted the coolers from the lines that they were hooked up to, and they numbered the parts, and then

(Deposition of M. L. Newell.)

the coolers were disassembled, then later they were put back the same way, and we reassembled them where they were previously installed.

Q. Could any straining of the cooler in installation cause a fracture at the point of sweating? [946]

A. I don't believe so. I don't see how there could be a fracture—I don't believe there would be. In other words, you have your leaks so—you might say so unevenly divided, and on all ends of all three heat exchangers I just can't imagine where any bind or stress would cause that.

Q. You couldn't see the leaks visually, you say?

A. No, I could not.

Q. And in repairing them, the place where the leak appeared to be would be identified and soldered over at that point; is that right?

A. That is right.

Q. Did you, during the course of your testing, observe any sludge on the oil side?

A. You mean in testing—that is, you mean in the tank or on the boat, or where?

Q. Well, either place.

A. Either place—well, the answer would be no to both of those, because—

Q. From your own knowledge, of course.

A. Yes, from my own knowledge, but all the testing on the boat actually was done when the heat exchangers were all in place, and so we would have no reason for noticing the fact, and they weren't tested in the tank until—I mean at the shop until after they had been boiled out.

(Deposition of M. L. Newell.)

Q. And you were not there when they boiled them out? [947]

A. No, when they boiled them out, I was not there.

Q. You said the heat exchangers were not opened up before they were removed from the engine. You mean that the exchangers were not removed?

A. That is right.

Q. How are the coolers supported or mounted on the engine?

A. They are held mainly by the base, and I believe at one place they are bolted to the base of the engine.

Q. Could excessive vibration, in your opinion, cause leaks in these coolers?

Mr. Howard: That is objected to as repetitious.”

Mr. Hokanson: That is agreed. I agree that the question has already been asked.

The Court: It will be stricken, and the answer, also.

“Q. You mentioned, Mr. Newell, that it was your knowledge that there was a man from the Texas Oil Company present with you when you went aboard the Tanker Urania after she docked.

A. Yes, that is right. [948]

Q. Do you know whether he took a sample of oil from the crankcase?

(Deposition of M. L. Newell.)

A. I don't recall whether he did or not. I believe that he did, however. I am not positive about that, though, but I believe that he did.

Q. You have mentioned that there was practically no oil in the crankcase since in this type of engine it was all pumped from the day tank, and did you take any sample of oil from the day tank?

A. I didn't take any samples at all, no.

Q. You mentioned the Kingsbury thrust bearing in your testimony. Do you refer now to the thrust bearing which controls the up and down play of the vertical shaft of the timing gear?

A. No; I refer to the Kingsbury thrust bearing as the thrust bearing that takes the thrust from the propeller shaft on your crankshaft—that would be the horizontal thrust.

Q. And there was no damage there?

A. There was no damage there, and it showed excellent alignment.

Q. That is, the crankshaft?

A. Yes, the crankshaft.

In other words, the engine in relation to the propeller shaft. [949]

Q. And how did you determine that?

A. I didn't make the actual test myself, but Mr. Firth made it—made the test and used a dial indicator, and he laid that dial indicator along the bed of the Kingsbury thrust shaft running horizontally with the top of the propeller shaft, and it showed no misalignment there.

(Deposition of M. L. Newell.)

Q. Did you observe Mr. Firth make this test?

A. Yes, I observed Mr. Firth make the test, and I noticed, that is, observed the readings on the dial indicator.

Q. You were aboard the ship on the 11th of November, too, were you? A. Yes.

Q. And how long did you work aboard the Tanker Urania?

A. Well, I—if the 11th was the day it came in then I worked aboard the Urania every day that it was in, excluding the day before it left.

Q. Was the engine jacked over or other alignment tests made?

Mr. Howard: Are you referring to any particular time, counsel?

Mr. Hokanson: At any time during this period.

A. Yes, we made a test; that is, when we made that test of the thrust bearing we turned the engine over. In other words, it is necessary to do that in order to get a complete test on your alignment of your engine. On various times it [950] was turned over in timing, etc.

Q. Did you inspect the camshaft in the course of your work on the boat?

A. I didn't inspect it myself, but it was inspected.

Q. Reverting back to the coolers and the tests that were made in your presence, could you give us an illustration or an analogy as to the amount of air that appeared to be leaking from the various leaks in the cooler? I had in mind, for instance, compar-

(Deposition of M. L. Newell.)

ing it with the type of air bubble you get in testing a puncture of an inner tube of an automobile tire. Would there be any way of comparing the amount of air emerging?

A. The tests, you might say, are similar, and you immerse both completely in water, and some of the leaks were—that is, they showed very fine. In other words, you might say almost—I don't know just how small you would say—but a little larger than a penpoint—maybe the size of the head of a match. All others were leaks that were considerably more than that.

Q. In terms of size, how many times bigger?

A. Maybe twice as big. True, they were not all the same size leaks, and they all were—when I speak of one leak, there might be half a dozen places along like a crack where they would be coming out. It wouldn't just always have a single leak coming from what I refer to as a leaking [951] cooler. There might be three or four places in that one location.

Mr. Hokanson: I have no further questions.

Redirect Examination

By Mr. Howard:

Q. Mr. Newell, from the time that you handled or examined the lubricating oil cooler, did you ever see any evidence that it had been dropped?

A. No.

Q. Or struck any place?

A. No; nothing external; everything was appar-

(Deposition of M. L. Newell.)

ently all right.

Q. Did you look for such damage?

A. Yes, sir.

Q. Now, these leaks that you mentioned and described the size as being the size of the head of a match, some of them, that is, are you referring to the opening, that is, just the leak itself, or are you referring to the size of the bubbles that emit from this leak?

A. I am referring to the bubble that came from the leak. In other words, you could not see the leaks by just examining visually.

Q. None of the leaks you have identified here would be as large as the head of a match, would they? A. Oh, no, not that large. [952]

Q. Was there any evidence when you first inspected the heat exchangers aboard the Tanker Urania that the unit had been removed or unbolted—unfastened recently?

A. No, there was—no, I would say not recently.

Q. Was there any evidence that the heat exchangers had been worked on?

A. No, there was no evidence of any work having been done on heat exchangers for quite some time.”

Mr. Hokanson: I move to strike these questions as being not within the scope of redirect examination.

The Court: Beginning where?

(Deposition of M. L. Newell.)

Mr. Hokanson: Line 10, page 164 (line 1, page 953 of reporter's transcript).

Mr. Howard: If the Court please, counsel went into that subject on his cross-examination, questioned the witness as to whether there was evidence of the heat exchangers having been struck or damaged by any blow of any kind. I think it is appropriate to inquire of the witness on redirect further along this same line. The matter was brought up on cross-examination.

Mr. Hokanson: Your Honor, I believe Mr. Howard developed fully in his direct examination the removal of the heat exchangers from the vessel and the examination made by this witness, and now he pursues a line of [953] questioning with respect to that examination which is beyond the scope of the cross-examination and which was developed on direct.

The Court: Do you mean to say that in your last examination of the witness you did not go into the subject of unfastening the cooler by unbolting it, is that a part of your point?

Mr. Hokanson: My recollection is not clear, but I believe Mr. Howard established how they were removed and how they were replaced.

The Court: The objection is overruled.

“Q. Was there any evidence that it had been patched up at all, or soldered? A. No.

Q. Aside from the leaks that you discovered

(Deposition of M. L. Newell.)

when it was immersed in the water, would you say the heat exchanger was in good condition?

A. In splendid condition.

Q. The lubricating oil cooler and also the fresh water cooler?

A. That is right.

Mr. Howard: That is all.

Recross-Examination

By Mr. Hokanson:

Q. Mr. Newell, you say there was no evidence that any work had been done on the coolers recently?

A. That is right.

Q. You removed the cooler from the ship, although, as I recall, you stated that the crew actually unbolted it.

A. The crew unbolted the coolers, yes, that is right.

Q. And you didn't examine the coolers yourself until you saw them tested; is that correct?

A. No. I took them to the shop and I was there while they were partially unbolted. In other words, they were getting ready for the test then. I wasn't there as to all of it, but I was there through part of it.

Q. These tests were conducted, as I understand it, after the coolers had been boiled out.

A. That is right.

Q. So it wasn't until they were actually pressure tested that you made any inspection?

A. Of the internal part, yes. Of the external

(Deposition of M. L. Newell.)

part, when I was taking them up there—when they were taken off of the vessel.

Q. Well, how can you say that there was no work done on them?

* * *

“A. I will say that I believe there hadn’t been, because of the bolts necessary to disassemble it, and that they hadn’t been removed in quite some time. In other words, the paint on the heat exchangers was hardened so it would have been at least, in my opinion, a year—probably more; and the condition of the zinc inside, and there wasn’t too much of the zinc inside, therefore if anybody serviced this recently, they would have replaced the zincs. In other words, things like that, whenever you are working on the zincs themselves, or whenever anything is apart, you replace your zincs on account of electrolysis, and you replace your gaskets in the heat exchangers.

Q. Did you watch the crew unbolt the heat exchangers?

A. I watched part of it. I didn’t watch all of it.

Q. It was then that you noticed that the paint was hardened down where the bolts were?

A. No; I noticed in the shop of the United Service Company when they started taking the covers off of the heat exchangers.

Q. Do you mean the flanges?

A. No; I mean the covers. The flanges are built

(Deposition of M. L. Newell.)

onto the covers, and over the ends of the heat exchangers there is a plate with approximately, oh, maybe thirty three-eighths studs and nuts holding that plate in place, and they had to [956] be removed, and in the middle of your plate there were flanges and they had to be removed in order to inspect them, at least the inside of the heat exchangers, and the condition of the nuts that they were cutting off, and you could tell that the paint had been hardened and that they had not been painted recently.

Q. Well, it was just your opinion that they had not been removed for about how long, would you say?

A. I wouldn't know for how long, but it would be my opinion that they had not been removed for at least a year.

Q. Now, you referred to putting the zincs in. What are the zincs?

A. In each of that particular type of heat exchanger there are, I believe, two zinc parts that constitute a plug of about three-quarters of an inch in diameter and approximately three inches long, which are sweated into a standard pipe plug and are screwed into the heat exchangers in the salt water flow—or the salt water part of the heat exchanger—and then also in the side of the heat exchanger on the covers—on two of the covers—are two single plates approximately, oh, three inches square and half an inch thick that can only be installed by disassembling the heat exchangers.

(Deposition of M. L. Newell.)

Q. Would it be customary to have to do that each time a cooler was removed? [957]

A Surely.

Q. You mean to make up new parts?

A. Either make them up or keep a supply on hand. In other words, get them from some source. You see, that is a condition that faces all vessels. In other words, some vessels have very little electrolysis and some have quite a bit.

Mr. Hokanson: No further questions.

Mr. Howard: That is all. Thank you very much, Mr. Newell."

Mr. Howard: That concludes the deposition of Mr. M. L. Newell. I offer it in evidence at this time.

The Court: It is received in evidence as a part of cross libelant's case in chief.

Mr. Howard: Next I would like to read the deposition immediately following, that of Mr. William Henry Weiler.

DEPOSITION OF WILLIAM H. WEILER

"Direct Examination

By Mr. Howard:

Q. Will you state your full name, please, and your residence address?

A. My name is William Henry Weiler. I live at 2573 [958] East 219th Place, Long Beach, California.

Q. By whom are you employed?

(Deposition of William H. Weiler.)

A. United Motors Service.

Q. In what capacity?

A. As a radiator repair man.

Q. And whereabouts is that place of business?

A. At 233 East Anaheim Street."

The Court: In what city is that, Long Beach or Los Angeles?

Mr. Howard: It is Long Beach, if the Court please.

"Q. How long have you been employed there, Mr. Weiler?

A. Let's see—two years and not quite three months. I came to work there January 2nd, I think it was, 1947.

Q. Mr. Weiler, do you expect to be in the State of Washington on or about April 6, 1949?

A. No, sir, I do not."

Mr. Howard: If the Court please, in the next few lines the witness does waive the reading and signing of the deposition. We can start at line 17, page 170. [959]

"Q. Do you recall an occasion last summer when a certain set of heat exchangers was brought to your plant by Mr. Newell?

(Deposition of William H. Weiler.)

A. I recall the heat exchangers were brought in, but who from I don't remember.

Q. How many of them were brought in at that time? A. I think four of them.

Q. And were those heat exchangers identified for you? A. What do you mean by identified?

Q. I mean were you told where they came from?

A. The understanding I got—the first understanding was that they were from the Marine Supply—now, that is the understanding I got, that that was where they were from. As far as that is concerned, I didn't sign the ticket to take them in, and I didn't sign the ticket to get them out, but I worked on them and that is all I know about them.

Q. What did you do with them?

A. Why, I boiled them out and tested them under pressure, and repaired them where they leaked.

Q. What did the boiling process consist of?

A. It consisted of putting them in a tank and boiling them to get the scale loose.

Q. For how long did you do that, approximately?

A. For three or four hours—something like that. As I had other jobs that would be ahead of them, I would leave [960] them so it wouldn't take so much longer.

Q. What is the solution or the fluid in the tank that they are boiled in?

A. L-27 radiator compound. It is a caustic

(Deposition of William H. Weiler.)

solution—that is what the people who sold it to us told us, at least.

Q. Well, before these heat exchangers were put in the tank for boiling, were they opened up in any way?

A. The plates were taken off of them, but that was done by some other fellows in the place.

Q. You didn't do that yourself?

A. No, I didn't do that work. The plates or side plates that go on them were removed so they could be boiled out and flushed.

Q. Now, the purpose of this testing—what did the test consist of?

A. The test consisted of putting the plates back on them and putting air pressure under them and submerging them in water.

Q. What was the nature of the plates you put on them?

A. These were to trap the air in them; you put those on so as to keep the air inside of the tubes so that when you put the pressure on them, then if they leak they will bubble up through the water in which we submerged them.

Q. How did you hook the air up?

A. We have a compressor there. [961]

Q. Well, how is that air hooked up—that is, how was it hooked onto the heat exchangers?

A. Well, at the time—we have a gauge to set the pressure, but in this case the gauge—we didn't use that gauge because it didn't run the pressure up far enough. We removed the gauge and put it

(Deposition of William H. Weiler.)

directly on the line; in other words, we set it at about line pressure.

Q. Now, can you state whether the air was put on the lubricating oil or the water side of the heat exchangers?

A. I think it was on the water side.

Q. And can you state how much pressure, approximately, there would have been in the air that was applied directly from the line?

A. It was between 160 and 200 pounds—right in there. It was directly from the compressor, and the compressor varies right in there somewheres.

Q. And that was done as to each of the heat exchangers? A. Yes, sir.

Q. What did you find when the air was run through them?

A. Well, the only way I could describe it was surface leaks. There was no leaks down in the tube, but leaks on top, and as to whether I found any on just one, well, I wouldn't exactly say—I don't know if I found them on all of them or on some of them—I just don't remember how that was. [962]

Q. Do you recall how many leaks you found—just approximately.

A. No, I don't. I found some, but I don't know how many. That gentleman who just went out of here stood there while I was repairing them and testing them. I think that fellow is an engineer on some ship.

Q. Would that be Mr. Newell?

A. I don't know his name. All I know is that

(Deposition of William H. Weiler.)

he stood there with me, and he said he was off of a ship, and that they came from Alaska and had had trouble with salt water, and I was interested in them.

Q. Did this gentleman stay there all the time the test was made?

A. He stayed there on some of them, but as to him being there when the test was made on all of them or not, I just don't know. He was there part of one day and part of the next. I think he came back the morning when I was repairing one of them, and he stayed until I finished it, and then he left, and he came back and picked them up. I think he was the one that picked them up.

Q. You mentioned that there were some surface leaks on the heat exchangers. A. Yes.

Q. Tell us a little more what you mean by that.

A. Well, on a heat exchanger, you have tubes in them [963] and—well, like you are talking about the tubes—the salt water runs around these tubes and cools the oil. Well, there was no leaks as evidenced by the method I tested the inside of the tubes with. All I found were on the surface and down in the seams.

Q. Had those seams already been soldered?

A. Well, they were soldered at the time, but they leaked.

Q. How large a leak would you say you found?

A. I don't know how to describe it. They just leak or they don't leak.

Q. Could you see the leak visually?

(Deposition of William H. Weiler.)

A. Yes, you could see the bubbles coming up from in the water.

Q. You could see the bubbles? A. Yes.

Q. Could you actually see the holes in the seams?

A. No holes—they were such high pressure that it wouldn't take much of a seam to—that is, much of an opening for them to leak.

Q. Do you recall whether there were leaks in each heat exchanger?

A. No, sir, I don't. I don't remember the leaks at all. I would say I had three of them, or something like that, but I don't know if there were leaks in each one of them or not. [964]

Q. What did you do to correct the situation you found in those tests?

A. Well, we repaired them—that is about all.

Q. But how?

A. Well, in the places that leaked, the old solder was removed and they were heated and new solder sweated in, and then they were retested again to see if they got it.

(Discussion by counsel off the record.)

Mr. Howard: May I have that answer read again, please, Mr. Reporter?

(The last answer given by the witness was read by the reporter.)

Q. How did you determine where to make the repairs?

A. When they were tested under air pressure and submerged, the water bubbles where there are

(Deposition of William H. Weiler.)

the leaks.

Q. Then you marked them where the bubbles originated?

A. No, not exactly marked them, but I just remembered where the place was.

Q. What were the results of your tests made after the removal of the old solder and putting in the new solder?

A. The final test was that they didn't leak. In soldering something like that, there is many times that the first time you solder it you won't make it. You will have to go back and sweat it in again. You just may not make it the first time. [965]

Q. Was there any evidence that these heat exchangers had been repaired recently?

A. None that I could tell.

Q. Did you see any evidence of any other damage to the heat exchangers?

A. Not at the time I didn't.

Q. Was there any evidence on the casing that any of the heat exchangers had been dropped or struck anything?

A. Not at the time I was working on them in the shop.

Mr. Howard: That is all. You may cross-examine.

Cross-Examination

By Mr. Hokanson:

Q. Do you remember the lubricating oil cooler?

A. Well, I remember there was some lubricating

(Deposition of William H. Weiler.)

oil coolers and some heat exchangers. One was from water to water, and another was from water to oil.

Q. Well, now, were all of these coolers of the same type?

A. They were approximately the same size as would be apparent to the eye. I never measured them, however.

Q. Well, are they heavy?

A. I should say they are.

Q. How much would they weigh, each, approximately?

A. I would say about 40 pounds disassembled, that is, with the plates off of the sides.

Q. When you say the plates off of the sides, do you [966] meant he plates to which the flanges are attached?

A. Well, yes, those flanges—circular flanges on each plate that are attached to the heater exchangers—I don't remember right off whether all of them had plates on them or not. I know some of them did, and possibly all of them did. Two other fellows in the place took the plates off and disassembled them and brought them to me, and I boiled them and repaired them, and then they put the plates back on them.

Q. Now, when you boiled these—what temperature did you use in that operation?

A. We used boiling temperature—212 or thereabouts.

Q. 212 degrees Fahrenheit?

A. Yes, 212 degrees Fahrenheit.

(Deposition of William H. Weiler.)

Q. And I believe you said that the solution in which they were boiled was called L-27 radiator compound?

A. Yes.

Q. And you were advised from your office or from the one who purchased it that this was caustic?

A. That is what I understand, that it was caustic.

Q. Now, did you immerse the whole heat exchanger in the solution when you boiled it?

A. Yes.

Q. And for how long a period of time did you boil them?

A. From three to four hours—right in there.

Q. I am not altogether clear as to the construction of these heat exchangers that you cleaned. When you put them into the solution, are they partly in a casing?

A. Let me think how to answer that question. Well, they are disassembled, as far as nuts and bolts go; I will put it that way.

Q. They still have the casing on the outside which contains the fluid which flows through on either the salt water or the lubricating oil side?

A. It has a casing on the outside and has continuous tubes on the other side, and some tubes have salt water and some tubes fresh water and some oil—whichever one it is.

Q. Now, when you introduced these heat exchangers into the solution, is the thing boiling at that time?

A. Well, it may or it may not be.

Q. Do you remember whether it was in this case?

(Deposition of William H. Weiler.)

A. No, it wouldn't be.

Q. Well, now, I want you to answer from your recollection and not by reasoning it out, Mr. Weiler.

Mr. Howard: Let him finish his answer, counsel.

The Witness: Well, I know it wouldn't be, because if it was boiling and you raise the lid on the tank, all of the steam will come right up in your face, so, anyway, every time I go there I cut it off to reduce the boiling so that I can at least get it in the tank, and that is another thing [968] that I will put in the tank with a hoist.

Q. That would be still high temperature when you introduce them into the tank?

A. Yes, I would say it was around 180—something below boiling.

Q. So you wouldn't have the steam in your face?

A. Yes.

Q. And then you would increase it to boiling?

A. Yes; I would close the lid and increase the heat.

Q. Now, do you have a good enough recollection of the construction of these particular coolers so that you could draw me some pictures of them?

A. Well, an amateur picture, I would call it.

(Discussion off the record while pen and paper are furnished witness, upon which he draws certain diagrams.)

(The diagram so drawn by the witness was thereupon marked by the reporter as "Libelants' and Cross-Respondents' Los Angeles Exhibit B.")

(Deposition of William H. Weiler.)

(Drawing marked Libelants' Exhibit 15 for Identification.)

“Q. (By Mr. Hokanson): Mr. Weiler, I am handing you what has been marked by the reporter for identification as Libelants' and Cross-Respondents' Los Angeles Exhibit B for [969] identification, and I will ask you what that exhibit shows (handing diagram to witness).

A. Well, it shows—it has three drawings, one of them shows a picture of the heat exchanger—

Mr. Howard: Which one is that?

The Witness: That is number “A.”

Diagram A shows a picture of the heat exchanger as you look on the oil side.

Diagram B is a picture outside looking at it from the salt water side, and Diagram C represents a drawing of a single tube on the heat exchanger.

Q. (By Mr. Hokanson): And you have sketched these pictures roughly yourself, have you?

A. Yes, that is right.

Q. You have designated the first drawing as Diagram A, and that, as I understand it, represents a cross-section view of the lubricating oil cooler which we are talking about here, from the oil side?

A. Yes.

Q. Now, would you please draw an arrow there and number it “1,” making the arrow point to one of the tubes which you look into as you look into the cross-section which is marked as Diagram A on your sketch?

(Deposition of William H. Weiler.)

A. All right (witness complies).

Q. Now, can you draw an arrow and mark it number "2," [970] showing the place where the tubes are, or where the chamber is which contains the tubes, which is fastened to the housing?

A. That is the plate that contains the tubes and is fastened to the housing (indicating on diagram).

Q. Now will you indicate by another arrow and by the figure "3" the housing in which these tubes are fastened in here?

A. Yes (witness complies).

Q. Mr. Weiler, I notice you have put a number of little holes or circles in the area which represents the housing. Would you please draw an arrow to one of those holes and mark it with the figure "4" and state what those holes or circles represent?

A. Yes (witness complies). Those holes have bolts placed through them, which hold the plate to the housing.

Q. Now, you have also drawn on this exhibit Diagram B, and as I understand it, that represents a cross-section view of the lubricating oil cooler looking into it from the salt water side.

A. That is right.

Q. And will you indicate on the diagram there where the housing is—indicate on Diagram B, and put an arrow with the number "5" there?

A. Yes (witness complies).

Q. And would you indicate by another arrow the tubes [971] through which the oil flows and mark that number "6"?

(Deposition of William H. Weiler.)

A. Yes (witness complies).

Q. Now would you indicate by another arrow and the number "7" the area in which the salt water flows?

A. Yes (witness complies).

Q. And would you indicate by another arrow in one of the circles that you have drawn in the area represented as the housing—draw the arrow and indicate it by the figure "8"?

A. Yes (witness complies).

Q. And what does number 8 represent?

A. That is the hole through the housing through which the bolt passes that holds the plate to it.

Q. You have also another diagram on the sketch which you have drawn, and which has now been marked as "C." State what that indicates?

A. That is an enlarged drawing of a tube of the heat exchanger looking from the oil side.

Q. In other words, what you have marked with the letter "C" is an enlarged view of what you have marked as No. 1 on sketch A?

A. Yes, that is right.

Q. And that is the tube from the view that you would have looking into it?

A. Yes, from the oil entry side. [972]

Q. You say from the oil entry side?

A. Yes.

Q. Now, looking into sketch A, or picture A, as you call it, can you state how the tubes which are shown there are secured in the housing?

(Deposition of William H. Weiler.)

A. They are—the tubes are—well, they are soldered to the housing.

Q. But they do not actually touch the housing, which is marked number 3, do they?

A. Oh, they touch it through the medium of the solder. The solder holds that. There is solder between the tubes and the housing.

Q. And that solder is only at the end of the housing where the tubes enter into the oil chamber; is that correct?

A. Well, those tubes are just secured by solder on the oil entry side of the heat exchanger; is that what you mean?

Q. Is there any plate which holds them at that end?

A. Well, yes, there is a plate there—the tubes are soldered to a plate, which in turn is soldered to the housing.

Q. Well, looking at figure B, that plate would be a vertical line at either end of figure B, would it not? A. Yes.

Q. And this plate on which the tubes are fastened is securely riveted to the housing? [973]

A. Yes.

Q. And in figure B the point which you have identified as the number 6 represents a rough idea of the tubes running transversely through the chamber which contains the oil, although the oil is not visible to the naked eye when looking into figure

(Deposition of William H. Weiler.)

B, but you merely see the outside of the tube; is that correct?

(Discussion by counsel off the record.)

Q. Is that correct,——

Mr. Howard: Obviously, I will have to object to that question——

(Further discussion by counsel off the record.)

Mr. Hokanson: Well, I will strike the last question.

Q. What you have identified, Mr. Weiler, as figure 6 on sketch B is what?

A. That is an oil tube—that is a tube which contains oil on the inside and salt water passes over it on the outside when the motor is in operation.

Q. I note that you have drawn some lines through 6. What does that represent?

A. That is a shaded area to show the oil passing through the tube.

Q. But that oil is not actually visible when you look in the picture?

A. Not from the salt water side, it isn't. The oil [974] itself isn't, no.

Q. Well, what is No. 7 on sketch B?

A. That is the space between the tubes through which the salt water flows.

Q. Well, looking at it from the side—as we look at it, the water would be flowing into those areas, or out, as the case may be?

A. It would be going over and through that area.

(Deposition of William H. Weiler.)

Q. Now, the lines that you have drawn through the picture—the diagram C on your sketch—that represents what?

A. Well, they are pieces of metal put in the tube to help cool the oil off.

Q. Do they act as compartments within the tube?

A. Well, they more or less separate it—not all the way through the tube, but at various points on it——

Q. In other words, they are not solid all the way through the tube from one end to the other?

A. Well, I don't know. I never looked down in them.

Q. Now, can you point out on this sketch where the leaks were found that you have testified to?

A. Well,——

(Discussion off the record.)

Q. I wonder if you would mark it in red pencil with an arrow to the point where one of these leaks occurred, [975] if you can remember?

A. Well, as to whether it occurred on a heat exchanger that had oil in it or not, I just don't know. I don't remember that.

Q. Well, with respect to all of this that you cleaned, were the leaks located in the same area—that is, the same general area?

A. They were leaks between the plate and the housing, and I don't remember exactly if there were any leaks—I think there were—between the tubes

(Deposition of William H. Weiler.)

themselves on some of them—on the surface, but not down on the inside of the tubes.

Q. There were no leaks, as you recall it now, in the tubes themselves? A. No, sir.

Q. And you can't remember specifically where the leaks occurred on the lubricating oil coolers; is that correct?

A. No, sir. I repaired them, but I don't remember how many lubricating oil coolers there were. I would say approximately that I repaired three or four of them, or maybe two of them. I don't remember clearly on that now.

Q. Lubricating oil coolers?

A. No, there were four coolers there, I believe, and I repaired some of them—all of them—but I don't just remember exactly about all of them now.

Q. Well, were there leaks at the points which we have marked with the figure 2 on your sketch A, which is the point where the plate containing the tubes is soldered to the housing?

Mr. Howard: If you know.

A. Yes, on some of them there were.

Q. (By Mr. Hokanson): Well, you can't state definitely whether there were leaks at other points on the lubricating oil cooler, can you?

A. I can state definitely that there were leaks where these pipes joined the housing, and that there may have been leaks between the tubes, but if there were they were repaired. That is why I said in the beginning that they were surface leaks. They were

(Deposition of William H. Weiler.)

on the surface. There was no fracture, as my test showed, in the tubes themselves. The fracture was in the solder.

Q. Between the housing and the plate or the tubes and the plate?

A. I don't remember that correctly.

Q. In other words, you definitely know that on some of these heat exchangers that you cleaned there were leaks at the figure 2 on sketch A?

A. Well,—Now, we don't have a sketch of a heat exchanger with its water to water transfer, and I don't know whether they were on the one that carried oil or not. [977]

Do you mean if I made a remark that they carried a leak and I meant that the lubricating one leaked, or what?

Q. Well, if you can't remember, I wouldn't ask you to commit yourself on it now. I thought, though, that you testified definitely that on some of these heat exchangers the leaks were definitely on the point where the plate was soldered to the housing.

A. Yes, they were.

Mr. Howard: May I question him for a moment?

Mr. Hokanson: Yes; certainly.

Q. (By Mr. Howard): This position represented on your series of sketches and more particularly sketch A, point 2, that would be the same on both a lubricating oil and a water cooler, would it not? A. Yes, it would.

Q. So that, although the interior would be dif-

(Deposition of William H. Weiler.)

ferent on the water cooler, this would be the same (indicating on diagram)? A. Yes.

Q. (By Mr. Hokanson): So that when you point out the position at A-2 as the location of some leak, you are not sure whether that was in the water or the lubricating oil? A. That is true.

Q. But it was on that location on one or two of the coolers at least, that you recall? [978]

A. Yes, that is right.

Q. Now, when you immersed the heat exchangers in this solution for boiling, they were contained in the housing, which is represented here on the exhibit that you have drawn; is that correct?

A. When I immersed the what?

Q. When you put these heat exchangers in the solution to boil them out, they were contained in the housing, were they not?

A. Do you mean the tubes were contained in the housing at the time I put them in the tank to boil?

Q. Yes. A. Yes.

Q. And had you tested them before you boiled them? A. No, I had not.

Q. But you tested them after boiling them, did you? A. Yes.

Q. By putting them in a tank of water and running air through on what side?

A. The salt water side.

Q. Now, were there any signs of corrosion of the solder in your examination?

A. Well, the test we gave doesn't definitely show that the solder itself is corroded. It shows if there

(Deposition of William H. Weiler.)

is a leak in it which can be caused by corroded solder and [979] adhering to the housing up by the plate. But as to a test to show whether the solder was corroded or not—we didn't make that kind of a test.

Q. Now, have you on other occasions cleaned heat exchangers taken from vessels?

A. Yes, sir.

Q. And is the method you used the method prescribed for cleaning these heat exchangers?

A. Well, it is the method we use.

Q. You have to do this also for automobile radiators, do you not? A. Yes.

Q. Do you know whether leaks would be occasioned in the soldering by the boiling process?

A. The company that sells the L-27 radiator compound claim when they sold it that they investigated and that it doesn't affect soldering. That is what they claim.

Q. What about the temperature?

A. The temperature wouldn't have anything—Well, how do you mean the temperature?

Q. Well, the temperature of the solution.

A. Would the temperature in itself affect the solder; is that what you mean?

Q. If you know. Have you ever had the experience of testing it out to determine it by putting a heat [980] exchanger in the solution heated to 212 degrees Fahrenheit, to see if that would cause the leaks in itself? A. No, sir.

(Deposition of William H. Weiler.)

Q. You never determined that?

A. Well, I have never made a scientific test of it, no, sir.

Q. The metal from which the housing is made is not the same kind of metal as the tubing, is it?

A. I don't know.

Q. Well, do you know whether the shrinkage caused by high temperature in the metal which the tubes are made from is any different than the shrinkage or expansion of the metal from which the housing is made?

A. Well, I believe both metals are both the same metal, and any shrinkage or expansion there would be caused by reason of a different quality or thickness of the metal itself, if there was any, and as to how much I just don't know.

Q. How thick, if you know, are the plates which you have referred to in your earlier testimony, in which the lubricating oil tubes are fastened?

A. I don't know that either.

Q. Do you have any idea?

A. Well, I would say approximately maybe a quarter of an inch—something like that—maybe an eighth of an [981] inch—but I think around a quarter of an inch. I am not positive on that, however.

Q. Do you remember how large the air bubbles were coming out of these leaks?

(No answer by the witness.)"

(Deposition of William H. Weiler.)

Mr. Howard: That is objected to as repetitious.

Mr. Hokanson: This witness has not testified.

The Court: The objection is overruled.

“Q. To assist you in answering that, if you are able to answer it, could you compare it to the bubbles that one might see coming from a leak in an automobile inner tube that has been immersed in water?

A. The bubbles in the tire's inner tube would be greater and faster than the bubbles in something like that. This is just a guess, you know. I don't know exactly how big the bubbles were, but I would say about the size or the thickness of a pencil lead, or something like that.

Q. And you took off the gauge, as I understand it, and ran the pressure through from the line?

Mr. Howard: That is objected to as repetitious.”

The Court: The objection is overruled.

“A. Yes.

Q. (By Mr. Hokanson): And I understand that you said in your testimony that the pounds of pressure ranged from 160 to 200 pounds?

Mr. Howard: That is objected to as repetitious.”

(Deposition of William H. Weiler.)

The Court: Overruled.

“A. Yes, that was about it.

Mr. Hokanson: I have no further questions.

Mr. Howard: That is all I have.”

Mr. Howard: That concludes the deposition of Mr. Weiler. I offer it in evidence at this time.

The Court: It is received as a part of cross libelant's case in chief.

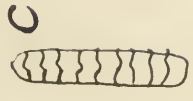
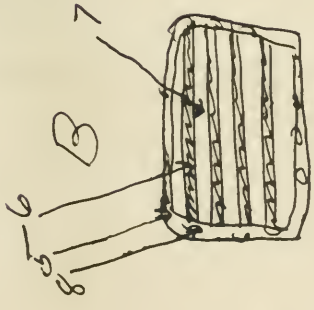
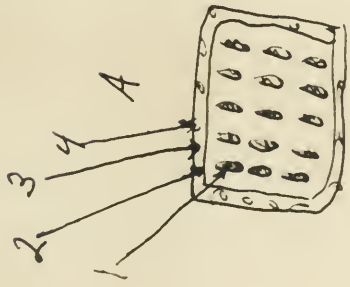
Mr. Hokanson: At this time, Your Honor, the libelants and cross respondents offer in evidence Exhibit 15, which is the sketch identified by the witness Weiler in testifying concerning the coolers.

Mr. Howard: No objection.

The Court: Admitted.

(Libelants' Exhibit 15 received in evidence.)

12322



LA-B-
W. L. H.

CAUSE..... 15766
LIBELANT EXHIBIT 15
ADMITTED APR 13 1949

Libelants and Cross-Respondents
Exhibit # "Los Angeles-B"
for identification.

W. L. Heathrot, N. P.
March 25, 1949

Mr. Howard: At this time, cross libelant would like to read the deposition of Mr. Pike, beginning at page 79 of the large volume of depositions.

Line 17, page 79.

DEPOSITION OF E. W. PIKE

“Direct Examination

By Mr. Howard:

Q. Will you state your full name and residence address, please, Mr. Pike?

A. Edwin W. Pike, 286 Ravena Drive, Long Beach, California.

Q. What is your occupation, Mr. Pike?

A. Surveyor for the American Bureau of Shipping.

Q. And at what port do you act for the American Bureau of Shipping?

A. Well, it is called Los Angeles; it is Long Beach, Wilmington, and San Pedro.

Q. Mr. Pike, do you expect to be in Seattle, Washington, or or about April 6, 1949? [984]

A. No, sir.”

Mr. Howard: If the Court please, the witness in the next few lines does waive the reading and signing of his deposition. We can start at line 18, page 80.

(Deposition of E. W. Pike.)

“Q. Mr. Pike, do you recall the Tanker Urania?

A. Yes, sir.

Q. Will you state when your first contact with that vessel occurred? A. November 11, 1948.

Q. And what services were you requested to perform at that time?

A. I examined the main engine for breakdown——

Q. Was the Tanker Urania classified by the American Bureau of Shipping? A. Yes, sir.

Q. In what class—how do you describe the classification?

A. Well, it is what we call a cross A-1-3 oil carrier.

Q. At whose request did you inspect the Urania?

A. At the request of the General Steamship Corporation.

Q. State, if you can, the date when you first went [985] aboard the Tanker Urania and where the vessel was located at that time?

A. It was on November 11, 1948, at the Craig Shipyards, Long Beach, California.

Mr. Howard: Mr. Reporter, may we have this document marked as an exhibit next in order.

(The documents were marked by the reporter as ‘Claimant’s and Cross-Libellant’s Exhibits X-1 and X-2 for Identification.’)”

(Deposition of E. W. Pike.)

(Survey report marked Respondent's Exhibit A-21 for Identification.)

“Q. State, if you can, any other persons present at the time you went aboard the vessel on November 11, 1948.

A. Mr. Harry J. Summers, Mr. Antippas, Mr. R. H. Hanna, and Mr. George M. Dupuy.

Q. Handing you what has heretofore been marked by the reporter for identification as Exhibits X-1 and X-2, will you state what that is, please (handing documents to witness)?

A. That is my report on the Tanker Urania to my New York office.

Q. And when was that report prepared?

A. November 17, 1948. [986]

Q. Did you attend the vessel on subsequent occasions after November 11, 1948? A. Yes.

Q. On what dates, please?

A. I don't have the exact days——

Q. What is your best recollection?

A. There were six visits, and it was from November 11 to November 17, 1948.

Q. Six visits from November 11 to November 17, 1948?

A. Yes. Some of those were—that is two of them were at night—late visits they call them.

Q. Did your inspection and survey of the Tanker Urania extend beyond the condition of the main engine? A. No, sir.

(Deposition of E. W. Pike.)

Q. Will you state, please, what condition you found the main engine of the Tanker Urania to be in on your first inspection on November 11, 1948?

A. Well, through the inspection plate the timing gears were badly worn, galled and destroyed.

Mr. Howard: May I have that answer again, please?

(The answer of the witness was read by the reporter.)

Q. Mr. Pike, will you amplify what you mean by through the inspection plate?

A. They have to open the inspection plate on the lower casing of the crankshaft—or the casing of the engine, so [987] that you can see into it.

Q. Was that opened up when you arrived on board the vessel?

A. I can't remember, but I believe it was. There was a workman from the manufacturer, I believe.

Q. What was the type of main engine that was installed on that vessel?

A. The name of it, you mean?

Q. Yes. A. The Union Diesel Engine.

Q. Do you have the horsepower of that engine?

A. 560 horsepower.

Q. Well, can you tell us a little more as to the state the vessel was in, that is, as to the condition of these timing gears?

A. Well, they were badly chewed up—badly worn out.

Q. Were the upper gears in the same condition as the lower gears?

(Deposition of E. W. Pike.)

A. Well, I would say about the same—they were all chewed and worn badly; I have it here (referring to report), “4 helical timing gears destroyed.”

Q. Will you go on, please, to describe any other conditions that you found aboard the vessel in the main engine on that first inspection on November 11, 1948? You may refer to the survey report that we have identified, [988] Mr. Pike, if you wish.

A. Well, let's see; due to that condition, we started searching for further trouble, such as the crank bearings and the main bearings, and we took a sample of the oil in the casing and the sump of the casing.

Q. Was there a considerable quantity of oil in the crankcase?

A. No, not much, but in the sump—we pumped a sample of that out and found salt water in it.

Q. How did you determine there was salt water in it? A. We tasted it.

Q. And how was the sample obtained from the sump?

A. We call it a squirtgun—it is a pump gun.

Q. Did you preserve any sample?

A. No.

Q. What condition did you find the other bearings that you referred to to be in, the main bearings; what condition were they in?

A. They were found to be satisfactory.

Q. There was no evidence of any damage to

(Deposition of E. W. Pike.)

those gears? A. No.

Q. Did you examine the terminals leading into the cylinders for lubricating oil?

A. No. 2 cylinder, the water jacket terminal showed signs of leaking. [989]

Q. Did you personally examine that?

A. Yes, sir.

Q. And what evidence was there of leakage?

A. Well, the gasket was destroyed, and the crust destroyed on the side.

Q. Can you locate that gasket for us more particularly? Was it on the outside of the cylinder or between the cylinder and the liner?

A. It goes through the cylinder into the liner—the end was the side of the cylinder.

Q. Was the gasket you found destroyed on the outside of the cylinder or on the inside of it?

A. On the inside of it.

Q. Had that been opened up before you arrived aboard the vessel? A. I am not sure.

Q. What type of gasket was that, Mr. Pike?

A. It was a metallic gasket.

Q. Can you tell us a little more about the condition of that gasket that you found?

A. Well, I just can't remember the condition. I saw it, and it was just another gasket, and I threw it away and prepared for a new one.

Q. Now, from your examination of that particular part of the engine and No. 2 cylinder, could

(Deposition of E. W. Pike.)

you tell whether [990] there had been a leakage of some fluid?

A. Yes, there was water running down the side of the cylinder.

Q. Running down the side of the cylinder or the liner?
A. The liner—dribblets of water.

Q. Did you observe that water yourself when you inspected the engine?
A. Yes, I did.

Q. What was the condition of the liner itself?

A. It was satisfactory.

Q. Was there any apparent damage to the liner?

A. No.

Q. Could you state whether the water you found inside the liner was fresh or salt water?

A. I did not determine that.

Q. You are acquainted with the construction and operation of Diesel engines, are you not?

A. Yes, I would say so.

Q. From your knowledge of Diesel engines, will you state where that water would have drained to that you found on the inside of the cylinder liner?

A. Down into the base of the engine.

Q. Well, is there any other fluid contained in the base of the engine?

A. The lubricating oil. [991]

Q. So that this water that was draining would drain down into the chamber that contained the lubricating oil?
A. Yes.

Q. What type of connection was there in the cylinder or cylinder liner where you found this

(Deposition of E. W. Pike.)

destroyed gasket? A. I can't remember.

Q. Was it threaded?

A. Yes. It wasn't necessary to go that far into it at the time.

Q. Did you personally examine the lubricating oil cooler aboard the tanker on your first inspection? A. Yes.

Q. What condition did you find in the cooler on your examination? A. Well——

Q. Can you describe the cooler to us—just very briefly?

A. I would like to say that when we open coolers like that, there is a certain amount of ordinary dirt that collects in there, but that is satisfactory; it is not too bad, as far as dirt is concerned.

Q. Would that be in the salt water side or the lubricating oil side?

A. The salt water side.

Q. Well, how could that affect the operation of the cooler? [992]

A. Oh, it didn't hurt it.

Q. Can you proceed now, Mr. Pike, to describe what you found the condition to be upon inspection of the cooler?

A. The cooler was taken ashore and tested and found weeping—well, not bad leaks, but just leaking, and it was decided to take it to the service shop that built them, I believe it was, and overhaul it and put it in good condition again.

Q. Was the cooler tested in your presence?

A. No, we didn't put that information down on this report (indicating document). The Union Oil

(Deposition of E. W. Pike.)

Service man—the Union Diesel service man does.

Q. Did you verify that the cooler was actually leaking, or weeping, from your own personal inspection? A. Yes.”

The Court: Court will be in recess until 1:30 this afternoon.

(At 11:55 o'clock a.m., Wednesday, April 13, 1949, proceedings recessed until 1:30 o'clock p.m., Wednesday, April 13, 1949.) [993]

April 13, 1949, 1:30 o'clock, p.m.

Mr. Howard: Page 88, line 14.

“Q. And that was after it had been removed from the vessel? A. Yes.

Q. And where was it located then?

A. In the shop.

Q. Of the Craig Shipbuilding Company?

A. It wasn't—I mean it wasn't the final test. They took it up there, and they reported to me a total of thirteen leaks in the two coolers.

Q. In the two coolers, did you say?

A. Yes.

Q. Now, that refers to just the lubricating oil cooler, or to the fresh water cooler?

A. Two of them.

Q. And the thirteen leaks were discovered in both coolers? A. Yes.

Q. Were all of the coolers removed from the vessel? [994]

(Deposition of E. W. Pike.)

A. No, not all of them; just the two.

Q. That would be one fresh water cooler and one lubricating oil cooler? A. Yes.

Q. Do you know how many of those thirteen leaks were found in the lubricating oil cooler?

A. No; only from verbal conversation, that is, between the Union Diesel man and myself.

Q. Will you describe for us, Mr. Pike, from your own personal observation, where the leaks were found in the lubricating oil cooler?

A. We call it the tube sheet.

Q. Can you amplify that for us as to where that would be?

A. Not knowing the terms of the manufacturer—it is the corrugation plates fastened together. I don't know whether you would call it sweated together or soldered together, or what.

Q. Is it where the joint occurs?

A. Yes, where the joint occurs.

Q. At the seams? A. Yes.

Q. And what was the nature of those leaks that you found?

A. Well, as I say, it just weeps, and by weeping—well, that is in marine terms; in other words, it is not a stream. [995]

Q. The leaks were located by circulating some fluid through there and determining where the fluid penetrated through the tubing or the sheet; do I understand you correctly on that?

A. Yes. Ordinarily the repairs would have been

(Deposition of E. W. Pike.)

done right at the shipyards, but, as I understand it, it is the Union Engineering Company's procedure to take those things to the manufacturer for such service.

Q. Do you recall whether there was a representative of the Union Diesel Engine Company present at the time you made your inspection aboard the tanker *Urania*?

A. Yes; Mr. S. W. Newell.

Q. And was there anyone else present from the Union Diesel Engine Company that you recall?

A. Not by name—but two or three men.

Q. Two or three other men that you don't recall by name? A. That is right.

Q. Did you examine the vertical shaft of the main engine? A. Yes.

Q. And what condition did you find it in?

A. We put it in the lathe to check for true, and it was satisfactory.

Q. There was no misalignment or bend at all?

A. No. [996]

Q. What recommendations did you make, Mr. Pike, as to the conditions that you found in the main engine of the Tanker *Urania* after your initial inspection?

A. Well—the damaged gears to be removed and replaced, and the water jacket and gasket removed, and the coolers cleaned, tested and repaired; clean out the sumps or the pit of the engine; open up No. 6 cylinder, No. 7 cylinder, main thrust cylinder,

(Deposition of E. W. Pike.)

overhead camshaft journals; main bearings opened for examination and found satisfactory. And I recommended the vertical shaft be removed to the shop and checked for alignment.

Q. And that was done, was it?

A. Yes.

Q. And the other items that you have mentioned just above were also performed?

A. Yes.

Q. And did you also recommend that the lubricating oil in the crankcase—lubricating oil should be flushed out? A. Yes.

Q. And was that done?

A. Yes; any damage of that sort, we search around in the vicinity for anything that may be the cause or be one of the causes.

Q. Did you have occasion to check the various items of work that you have just mentioned during the progress of [997] the work?

A. Yes, every day I was there. As I say, I haven't got time to do it, but we run around to the different jobs, and I watched the progress of it there.

Q. After the repairs had been completed, were you present aboard the vessel during the dock trial?

A. Yes, I had a dock trial and I had a sea trial.

Q. Let's take the dock trial first.

A. Yes.

Q. Do you have the date of that?

A. No, I haven't.

(Deposition of E. W. Pike.)

Q. But you recall that——

A. I can give the approximate date.

Q. All right, please do so.

A. The approximate date would be the 16th of November.

Q. Well, for how long were the engines run at that time?

A. Well, I examined them for probably two hours, but they had been run for several hours.

Q. How did the main engine perform on that occasion? A. Fine.

Q. Did you check them to determine whether there was any unusual noise? A. Yes.

Q. In the bearings, I mean. A. Yes. [998]

Q. And in the gears.

A. Yes; all over it, while she was running—we go all over.

Q. And did you find any such noise?

A. No; nothing.

Q. Did you find any evidence of any malfunction of the engine? A. No, sir.

Q. On that occasion did you check the lubricating oil? A. Yes.

Q. And was there any evidence of contamination?

A. No, sir; you wouldn't detect it that quick, but there wasn't anything.

Q. But you did check for that?

A. Yes; and I examined the coolers.

Q. What did you find upon your examination of the coolers?

(Deposition of E. W. Pike.)

A. They were fine—that is, they were satisfactory.

Q. Are you acquainted with the pressures that are maintained in the coolers?

A. I am not very familiar with that particular fact—I don't remember offhand the pressures.

Q. During the time that you were on board the Tanker Urania for these various inspections, did you observe whether an operation manual provided by the manufacturer [999] was carried aboard the vessel?

A. Well, I feel quite sure I saw one.

Q. Did you have an opportunity to observe the manner in which the chief engineer of the Tanker Urania was performing his duties above the vessel?

A. Yes, I do recall——

Q. First, what nationality was he?

A. I believe he was a Greek. He couldn't talk English very plain, but the manner in which he worked was all satisfactory.

Q. You have been around Diesel ships a good deal, have you not? A. Yes.

Q. Foreign ships as well as United States flag vessels? A. Yes.

Q. You have seen a good many engineers functioning aboard these ships? A. Yes.

Q. State from your experience whether you would consider this chief engineer whom you found aboard the Tanker Urania was qualified.

(Deposition of E. W. Pike.)

Mr. Hokanson: I shall object to the question as leading."

The Court: Do you object to his qualifications to [1000] comment upon that?

Mr. Hokanson: No, the objection was made to the form of the question, Your Honor.

Mr. Howard: There is another question below which goes to the same point.

Mr. Hokanson: I will waive the objection.

"The Witness: I cannot answer that. He was a good engineer, but as far as his qualifications are concerned, I couldn't say exactly.

Q. (By Mr. Howard): Did the chief engineer seem to understand the requirements for the proper operation of a Diesel engine?

Mr. Hokanson: I shall object to the form of the question as leading."

Mr. Hokanson: That I objected to as leading, and the further objection which I will lodge at this time, as being too broad and vague, since what the requirements are for proper operation of Diesel engines has not been established.

(Deposition of E. W. Pike.)

The Court: I believe the objection should be overruled. It is so ordered. [1001]

“A. As I say, he performed his duties around the engine for me very satisfactorily.

Q. (By Mr. Howard): Did you attend aboard the vessel during the sea trial?

A. Yes, sir, I did.

Q. For approximately how long was the sea trial?

A. For approximately two hours in the open sea.

Q. And at what speed were the engines run at that time? A. 320 revolutions.

Q. Would that be full speed? A. Yes.

Q. And in addition to the two hours in open sea at full speed, were the engines also operated through maneuvers in the harbor? A. Yes.

Q. What was the total time altogether that the engines of the *Urania* were operated during the sea trial? A. Six hours.

Q. State your recollection as to the manner in which the engines of the *Urania* functioned on that occasion? A. Very satisfactorily.

Q. As the result of your attendance on the dock trial, and sea trial, did you have occasion to recommend any further repairs or adjustments in the main engine?

A. No, sir; I recommended that they open up

(Deposition of E. W. Pike.)

the [1002] inspection plates for examination of the gears.

Q. And was that done? A. Yes.

Q. What gears were examined then?

A. The timing gears.

Q. And what condition was found there at that time?

A. Fine—no sign of any wear or tear, or anything of the sort.

Q. Did you check the terminals in the cylinders?

A. Yes, I went right over the whole thing.

Q. And what was the condition of the terminals?

A. Fine.

Q. Did you check the lubricating oil then to determine whether there was any contamination?

A. No, sir; we saw it—but you mean to check—We can take up a handful of oil and feel it and look at it, and look for bubbles and froth, and we can test it for water.

Q. Was there any evidence of bubbles or froth or contamination? A. No, sir.

Q. During the various trips that you made to inspect the Tanker Urania, did you observe other repairs or work being performed for the vessel?

A. Not that I was concerned with. They didn't call me for anything else. [1003]

Q. Did you observe anything else; any other work being performed?

A. There were some cleaners around there doing something.

(Deposition of E. W. Pike.)

Q. But you were not concerned with the other general work? A. No, sir.

Q. Were you present at the Craig Shipbuilding Company's yard when the Tanker Urania arrived on November 11, 1948? A. Yes.

Q. Did it arrive under its own power?

A. No, sir, it did not.

Q. How was it brought in?

A. Well, there was a salvage boat alongside of it, but she was just swinging into the dock.

Q. And upon your inspection of the engine on the first occasion on November 11, will you state whether or not the main engine was in operating condition at the time? A. No, sir, it wasn't.

Q. Why?

A. On account of the gears being destroyed—the timing gears being destroyed.

Q. From the conditions which you found to exist aboard the Tanker Urania and more particularly in the main engine, and the coolers that were examined on November 11, will you state, please, your opinion as to the nature of the breakdown [1004] of the main engine?

A. My opinion is the condition of the timing gears would do a great deal more damage if they continued to run it. There was no evidence that the engine wouldn't run when I saw it.

Q. The timing gears being in the condition that they were in, do I understand you to say that more

(Deposition of E. W. Pike.)

damage would have been sustained if they had been run?

A. I believe so.

Q. Now, having in mind again——

A. Just excuse me a moment, but the service man come up from tow with her, and he told me they stopped it to save them. They might possibly have started it up or maybe run it, if they had wanted to—I don't remember, however.

Q. Mr. Pike, having in mind again the condition you have described that existed aboard the vessel in regard to the main engine and the lubricating oil and coolers on the occasion of your inspection of the vessel on November 11, 1948, will you please state your opinion as to the cause of the breakdown?

A. We don't do that; that is not our job to state the cause. Our job is to examine the damage and to recommend the repairs, and see that the vessel has the proper trials to enable it to continue on its way.

Q. Then you don't care to express an opinion as to [1005] the cause of the breakdown?

A. No, sir.

Q. After completion of the dock and the sea trials and the repairs, did you make a recommendation, Mr. Pike, as to the then condition of the main engine aboard the Tanker *Urania*?

A. At the closing of my report, do you mean? Upon completion of the repairs, the above recommendations for repairs, and upon completion of the dock and the sea trials—when the results of those were determined and appeared to be satisfactory,

(Deposition of E. W. Pike.)

then it was recommended that the vessel be returned—

Q. So that insofar as its representation or classification by you—that is, the American Bureau of Shipping—was concerned, the main engine had been repaired satisfactorily so that the vessel could proceed to sea? A. Yes, in her trade.

Q. Thereafter, Mr. Pike, did you present to the owners a statement for the services you had rendered aboard the Tanker Urania?

A. Yes, sir.

Q. What was the amount of those services?

A. \$163.00.

Q. And how was that charge computed?

A. I haven't got my book with me, but it was the [1006] approximate cost of the repairs plus the late service plus the expense.

Q. You state the approximate cost of the repairs; do they enter into the amount of your fee?

A. Yes.

Q. In what way?

A. They have a scale or a rule that determines the amount of visits—the number of visits made, and the cost of the repairs, in case of damages only.

Q. And so your service is determined according to a scale set up in the rule book of the American Bureau of Shipping? A. Yes, that is right.

Q. And are the fees which you charged for your services rendered to the Tanker Urania calculated on that basis? A. Yes, sir.

Q. And is the amount charged comparable with

(Deposition of E. W. Pike.)

what would have been charged for similar services to any other vessel of a similar type? A. Yes.

Q. I hand you what has been marked heretofore for identification as Exhtibit T-1 (handing document to the witness). Does that represent the charge that was made for your services? A. Yes, sir.

Q. And has that amount been paid?

A. I don't know. Some checks come right to our office and some go to the New York office.

Q. Well, in this case, to whom did you submit your report or survey?

A. Well, our New York office and the agent here.

A. And who was the local agent, again, please?

A. The General Steamship Corporation.

Q. And did you arrange to have any sample of lubricating oil aboard the Tanker Urania analyzed by a laboratory analysis? A. No, sir.

Mr. Howard: You may cross-examine."

Mr. Howard: At this time I will offer Identification A-21, Mr. Pike's survey report.

Mr. Hokanson: I object to the admission of the report to the extent that it contains comments based upon information not personally discovered by the witness.

The Court: May that be true of any survey report of this nature?

Mr. Hokanson: It may be true, Your Honor.

The Court: I suppose that when they first com-

(Deposition of E. W. Pike.)

menced [1008] making the law relating to the admissibility of marine surveyors' reports, one of the objections was that it contained information which was hearsay. Now, the question is raised anew on this objection, what is the law relating to admitting these survey reports with respect to all their contents which pertain to the job done?

Do you wish to set at large the question of the admissibility of such a document, or do you just want to limit the scope of your objection?

Mr. Hokanson: My objection would go to the admission of any part of the document which is not based upon the personal knowledge of the surveyor. In this case, it has been established by the witness' testimony that some of his observations were based upon information he received from third parties, with respect to the leaks in the cooler, for instance.

The Court: Do you mean as to the cause of the leaks?

Mr. Hokanson: As to the cause and as to the actual leaks that he reports as having existed. He has already testified concerning that, of course, in which he states that he received the information from some other person.

With respect to his own findings, I do not see that the report is objectionable. The question is whether the document may go in for a limited purpose, or whether certain portions of it may be stricken, or whether it should go in in its entirety.

Mr. Howard: If the Court please, we have al-

(Deposition of E. W. Pike.)

ready had the testimony of two witnesses who observed the leaks themselves, and as to the objections counsel raised, it seems to me they go to the weight of the document rather than to the admissibility of the document; and that since the witness has already testified to date in this deposition as to what he observed personally and has testified as to certain things that were reported to him by third parties, it seems to me that the document should be admitted in evidence for what benefit it has as to those he has personal knowledge of, and tied in with what we have testimony of other witnesses on as to the leaks and the lubricating oil.

The Court: I do not agree with counsel offering it that the objection in its nature goes to weight rather than admissibility. I think it goes to admissibility, and if you want to give me some authority on whether or not surveyors' reports are admissible only with respect to the direct evidence that they contain, I will consider it and any other authority you wish to offer. [1010]

Mr. Hokanson: May I suggest that there were additional reports that will be offered, and that if Your Honor cares to reserve his ruling until we are able to furnish authorities on that——

The Court: I will do it for a reasonable time. I may have to run the risk of ruling without the benefit of your authorities, I do not know, but I will wait as long as I can so far as the necessities of the trial are concerned. I will be glad to do that.

(Deposition of E. W. Pike.)

That is the kind of position in which the trial judge is frequently placed, as to which there is no similar position in which an Appellate Court is ever placed. An Appellate Court always has the benefit of either citation of authorities or an opportunity to themselves go into the library, take down the books, and look up the law. The trial judge cannot do that, or usually cannot. If counsel are not able to cite the authority, the trial judge either has to know it or has to let pass an opportunity that might otherwise be presented to disclose the authorities.

Mr. Howard: If the Court please, under those circumstances, I will reserve my offer.

The Court: I think the Court will act upon such a reservation.

Mr. Howard: Page 102, cross-examination.

“Cross-Examination

By Mr. Hokanson:

Q. Mr. Pike, how long have you been a surveyor for the American Bureau of Shipping?

A. Eight years.

Q. And are you a licensed marine engineer?

A. No, sir.

Q. How long have you acted as a surveyor?

A. I have been inspector and surveyor for ten years.

Q. Did I understand you to say, Mr. Pike, that

(Deposition of E. W. Pike.)

the sea trial was two hours that was conducted?

A. I didn't go to the log books, but I would say the sea trial was approximately two hours at sea—that is, after we left the breakwater, but sometimes they start them before they go through the breakwater and carry on until they get back to anchorage. In this particular case there was no set amount of time required. It was just a sea trial.

Q. Your estimate was, as I recall it, that the engines were run about six hours during the entire period of the trial.

A. Yes, as I recall, we went up to the oil dock to take on some bunker. As I say, there was no reason to make a record of the time.

Q. You boarded the *Urania* immediately upon her arrival at Long Beach, didn't you? [1012]

A. In the repair yard, yes, sir. I was there when she was swinging in.

Q. And when you went aboard, were the plates open at the time or did you cause them to be opened?

A. I believe they were open. There were workmen aboard who had been aboard I don't know how long, and I believe they were open.

Q. And the timing gears were still intact, were they?

A. The timing gears were still intact, yes.

Q. And were they removed in your presence?

A. Yes, they were removed in my presence.

(Deposition of E. W. Pike.)

Q. There are two lower timing gears on the Urania? A. Yes.

Q. Are they of the helical type?

A. Yes.

Q. Would you explain, please, what you mean by the helical type?

A. Well, they are just on a bias to run one gear into the other. We call them a train of gears.

Q. Are there also two helical gears at the top of the vertical shaft? A. Yes.

Q. If you remember, what is the diameter of the lower gears that were removed from the tanker Urania? A. Approximately 12 inches. [1013]

Q. Both of the same diameter?

A. No; one is a little smaller, if I remember right.

Q. And what would be the approximate diameter of the upper timing gears?

A. Approximately 10 inches.

Q. And the same number of teeth in both upper and lower gears? A. I am not sure.

Q. Do you know of what material the gears were made? A. Steel.

Q. And what would be the approximate depth of the teeth?

Mr. Howard: At what time, counsel? Are you speaking of gears as they were examined?

Mr. Hokanson: I have referred to the gears as he found them.

A. Oh, half an inch.

(Deposition of E. W. Pike.)

Q. And what is the approximate thickness of the teeth, if they were uniformly fixed?

A. Oh, probably half an inch at the base.

Q. And how much at the top?

A. Three-eighths.

Q. Three-eighths of an inch? A. Yes.

Q. You have stated that the gears were badly chewed. Would you describe what you mean by chewed? [1014]

A. Well, just heavily worn.

Q. Where was that wear apparent on the gears?

A. On the sides.

Q. On the sides of the teeth, do you mean?

A. On the sides of the teeth, yes. Some were up on the upper edge and some were on the lower edge and some were pretty well in the middle. It wasn't the same everywhere; that is, the wear was not uniform.

Q. The wear was not uniform? A. No.

Q. Was there any wearing into the core of the gear?

A. Some. By core you mean the root of the tooth where they connect?

Q. Yes. A. Yes.

Q. There was some wearing there?

A. Yes, some.

Q. Now, you have also stated that that condition obtained in the upper gears as well as in the lower gears. A. Yes, that is right.

(Discussion off the record.)

(Deposition of E. W. Pike.)

Q. Did you make the examination of the gears only while they were on the engine?

A. No, sir.

Q. When else did you examine them? [1015]

A. When they were out on the floor plates.

Q. And do you recall from the examination of the gears when they were on the floor plates whether there was any difference in the amount of wear as between the upper and the lower gears?

A. Not enough to state, except that they were badly worn—all four gears—and I rolled them and felt of them and saw their condition, but I didn't take any special note, because we have things like that happen every day, but to make an examination of that, why, it would have been a different case altogether.

Q. Mr. Pike, do you know what was done with the gears that were damaged and removed from the Tanker *Urania*?

A. No, I do not. I believe there was talk of taking them away; I don't know if they were left on board or not.

Q. What is the thickness, approximately, of those gears?

A. Four inches.

Q. Is it possible, Mr. Pike,—if you know—to determine upon an examination of worn helical type gears whether the worn or galled condition was brought about from excessive pressure on the gears?

A. It could be; that is why I checked the line shaft—vertical shaft—for true, and also went

(Deposition of E. W. Pike.)

through the bearings and camshaft to make sure there was no distortion there.

Q. Well, from the manner in which these gears appeared [1016] to be worn, did you have any opinion as to why they were badly chewed and worn?

A. None to state; because there can be various reasons. In my own opinion, I was satisfied by finding that wasn't out of alignment.

Q. You mean that from the investigation you made you found no misalignment in terms of straightness of the vertical shaft?

A. Yes—and out of alignment for bearings—In other words, the cap being pulled down too hard or not in position—which is a strain.

Q. Now, Mr. Pike, the character of the galling of these gears was such as to lead you to suspect that there might have been an overloading of the gears, one reason for the dragging or misalignment of the gears?

A. That is one of the things I started to search for, yes. There was also what we call a foreign matter in the pit, which is determined from the average contaminated oil. You understand, there was only oil in the sumps and not in the pit when I was around. There was only oil in the sumps of the pit.

Q. You mean that——

A. The engine is built similar to an automobile engine, with a low point—a sump they call it—

(Deposition of E. W. Pike.)

where the oil returns and the pump picks it up and takes it on. [1017]

Q. And the oil had been removed except for that remaining in the pit?

A. Various low spots, yes. The ballast condition of the vessel could have had a little list aft and made various low spots.

Q. And so, from the residue in the low spots, you examined what oil was there? A. Yes.

Q. And your examination of that oil consisted of tasting it? A. Yes.

Q. And is that an accurate test to determine foreign matter?

A. No, it isn't accurate. We sucked a pumpful of oil out and discharged it into a bucket, a clean bucket, and there was water in it, and I pulled up some and tasted it and it tasted salty.

Q. You mean there was already water in the bucket?

A. No; it was a clean bucket, and we put this oil that we hauled out of the pump in it and looked at it there.

Q. Now, if there were salt water, let's assume, in the oil, it would go to the bottom of the pit, would it not—so that the oil scooped up in the pit—

A. Well, we fixed the pump to the bottom of the pit to hold it off of the bottom—that is, it is just regular [1018] marine practice.

Q. Do you know what the capacity of lubricating

(Deposition of E. W. Pike.)

oil was on that ship?

A. No, I don't. I saw the gravity tank, but I don't know what the capacity was. I mean, I have it all in the record, but we have no reason to remember that.

Q. You don't even know the approximate capacity of it? A. No, I don't.

Q. Would you say that the oil taken from the bottom of the pit would always be the consistency of the oil when the pump is full?

A. Oh, no, that is not its regular pump. You see, there is this low spot——

Q. Well, now, just to be sure that I understand you, you have stated, I believe, that salt water would go to the bottom, if there were salt water in the oil?

A. I would say water would go to the bottom.

Q. Or any liquid or fluid that was heavier than oil would go to the bottom? A. Yes.

Q. And therefore, isn't it true that if you scoop it up from the bottom you don't necessarily have a true sample of all the oil when it is circulating throughout the engine?

A. No, sir—the water should not be there—what I call salt water. [1019]

Q. Wouldn't it get a certain amount of contamination that goes into the oil? A. Oh, yes.

Q. But my question is that the oil taken from the very bottom—if there were foreign matter in it would contain a greater percentage of that foreign

(Deposition of E. W. Pike.)

matter than the rest of the oil? A. Yes.

Q. Now, then, do you know——

A. I mean, I don't know, that is, I didn't see the oil that came out of it. It was dumped overboard, I believe, before she arrived. I don't know, however. I suppose—I judge ordinarily they would get freed of that oil to make repairs.

As I say, the chief engineer was the center of lots of questions, and I didn't bother to ask him.

Q. Was there any mechanism or any way of separating oil from the water on this engine?

A. They didn't use that in the case of a lot of them—they have a separator, but if there was an awful lot of water, they would just throw it away.

Q. But your filters would take foreign matter out?

A. They would take it all out, if you wanted it, yes.

Q. If they removed the filters, those filters would show whether you had foreign matter or not?

A. That is right.

Q. Now, in your inspection of the engine you found no wear on any of the main or crank bearings?

A. None out of the ordinary. It just showed contact everywhere.

Q. What, if you remember, is the method on this engine of establishing the position of the vertical shaft here?

A. She has a thrust bearing on the bottom.

(Deposition of E. W. Pike.)

Q. Does she have a thrust bearing on the top?

A. A thrust bearing——

Q. And is that of the ball bearing type—a ball of metal?

A. I can't remember, but I am quite sure there was a ball.

Q. Did you inspect those thrust bearings?

A. Yes.

Q. And what was the condition of those?

A. Fine.

Q. Was there any reason to replace them?

A. No. And I am not sure whether they did or not. They were in pretty good condition.

Q. Is there any end play in the vertical shaft?

A. End play?

Q. Yes. A. Yes, she has an end play.

Q. Is that adjustable? [1021] A. Yes, sir.

Q. And by what method?

A. I don't remember the adjustment arrangement right now.

Q. Well, if—that is, would it be possible for a maladjustment to cause the gears to be out of alignment? A. Could be.

Q. Do you know whether it is necessary to re-adjust that adjustment mechanism if the gears are replaced or a governor is dismantled?

A. Let's see if I can get your question in my mind.

Mr. Hokanson: Read the question again, please, Mr. Reporter.

(Deposition of E. W. Pike.)

(The pending question was read by the reporter.)

A. The manufacturer's tolerances—they try to bring it all back to the manufacturer's tolerances.

Q. Is that your complete answer to the question?

A. That is the best I know how to answer it, because, according to the age of the engine or the condition of the engine, if it is new it may have a design adjustment.

Q. Assuming it is necessary to install the timing gears, would an adjustment be indicated there?

A. No, only to service it—because you follow their design tolerances, and a new gear would be the same as the old gear when it was new. It is supposed to be the same gear. The new gear is supposed to be the same as the old gear when [1022] it was new. That is the only way I know how to answer that question.

Q. Have you ever seen on this Diesel type engine gears that were not properly adjusted in accordance with the tolerances you have described?

A. Yes, we handle every kind of engine that is made; steam, electric, and everything; so to point to one manufacturer's design—you just can't do it without some of the prints to follow.

Q. Now, would it in your opinion—would a condition which overloaded the camshaft put extra pressure or weight on those gears?

A. We call that hugging.

Q. Well, assuming that in this type of engine,

(Deposition of E. W. Pike.)

upon the retiming of the engine, a condition developed where the valves were hitting the pistons, could that cause a thrustback on the timing gears?

Q. Where the valve is striking the piston?

A. That is right.

Q. It should be all out of line then; I don't know just how that question is meant.

Mr. Howard: Do you understand the question, Mr. Pike?

The Witness: Not quite.

Q. (By Mr. Hokanson): Assuming the changes on this type of Diesel engine did create a condition whereby the flange [1023] did strike the pistons, and such a condition actually occurs, in your opinion could this cause undue stress on the timing gears?

A. It could cause it. We are not the experts of the designing construction. The engine, we will say, comes to me in classed condition. All those things have been taken care of in other fields.

Q. Would you say that the load on that shaft, the vertical shaft on the Tanker Urania, was relatively constant through two revolutions?

A. Two revolutions of the main shaft?

Q. Yes. A. I would say yes.

Q. And, that being true, how would you account for the uneven wear of the gears?

A. Well, the only account I can give, of course,—wherever the damage started, the main damage that occurred would cause the gears to misbehave in every manner. It could have started in the middle

(Deposition of E. W. Pike.)

and by the time it wore the center section it started considerable trouble with the top or the bottom.

In other words, once the damage is started, everything will happen.

Q. In other words, if you had a temporary condition of undue stress on those gears which caused the wearing on [1024] them, that would tend to make them erratic to the extent that additional wearing would be brought about to the effect that the whole thing would be aggravated, and you would have an uneven gear?

A. If the gears were so you could watch them and you saw the damage start, then you could get a better answer to the whole thing. The way I understand it, everything was going along fine, but she just kept getting lazier and lazier, as they say, and finally they shut her down. Whether she stopped herself or not, I don't know. She could, however.

Q. Do you know whether the wear was eccentric with reference to the center of the gears?

A. Not too much so. As I say, it was every way, and it had the service man puzzled as to how some parts of the gears were destroyed. I mean it would just disappear and then over here it would take up again.

Q. Would the teeth on one side of the gear be in better shape than on the other side?

A. Not too much so. In certain cases and in spots it would be. In some spots the entire tooth would be satisfactory, and then you would go along

(Deposition of E. W. Pike.)

and we would see three more teeth that would start to show wear, and the fourth tooth from that one would be excessive, which would make you wonder why it didn't happen on the one before that.

Q. Mr. Pike, you have examined lots of gears—
[1025] damaged gears, in vessels in your experience, haven't you? A. Yes, sir.

Q. Would you say that the kind of wearing that you found in these gears, as you have explained it in your testimony, would be characteristic of poor lubrication?

A. It could, along with foreign matter or overheating. I mean there was no one opinion that I could give. I would not state my own opinion of the thing, because that would not be fair.

Q. In other words, there could be a variety of causes for that condition? A. Yes.

Q. Have you ever seen gears of this type which were damaged because of contaminated lubrication?

A. Yes.

Q. In those occasions did you find damage to other bearings?

A. In certain cases, yes, where it had got away from them—had gone too far before the engine was stopped—I have seen considerable damage.

Q. Well, do you know from your experience what usually happens first in this type of damage where we will assume that the damage is caused in part by improper lubrication—whether the tightness of the bearing or overloading—whatever character

(Deposition of E. W. Pike.)

it might be—occurred before the wearing of [1026] the gears, or if the wearing of the gears occurred first?

A. Well, it just gets hot with no lubrication and starts what we call spalling or galling or pitting—that starts. Is that what you mean?

Q. Well, I am not sure you understood my question.

Do you know from your experience in these matters with damage of this type, which occurs first, the overheating or overload, or the actual wearing of the gears?

Mr. Howard: Now, do you understand that question?

The Witness: I believe so. I will try to answer it.

A. First, there was the poor lubrication you wanted—if it was contaminated. Which did you want first?

If it overheats first and starts to wear, it then starts to go on out.

Q. You are speaking now of overheating in the gear——

A. Due to retaining contaminated lubrication or due to foreign matter.

Q. But if you once get an erratic condition in those gears, you have set up a chain——

A. ——in which everything can happen.

Q. It is endless; is that it? A. Yes.

Q. Are you acquainted, Mr. Pike, with the analysis test of lubricating oil and the various factors

(Deposition of E. W. Pike.)

which are used in making an analysis of the oil?

Mr. Howard: I waive my objection.

“A. I am not fully aware, but for my own information at times—time and again I have watched and I understand from the service man——

Mr. Hokanson: No; just a minute.

Mr. Howard: Is that part of your answer to the last question?

The Witness: No.

(Discussion by counsel off the record.)

Q. (By Mr. Hokanson): In cases of damage to timing gears, as you observed them, have you ever seen a damage to gears of that type where the lubrication is proper but you had an overload on your camshaft? A. Yes, sir.

Q. Or where you might have a deflection in your crankshaft; is that possible? A. Yes.

Q. In other words, these gears are of such a character that they require almost perfect alignment in order to continue to function without substantial wear? A. Yes, sir.

Q. Well, Mr. Pike, if the gears of this type are in perfect alignment and they have adequate lubrication, how [1028] long would you say the gears could run if they were in perfect alignment?

A. Well, we call for examination in four years.

Mr. Howard: Every four years, do you mean?

(Deposition of E. W. Pike.)

A. Yes, every four years. It would be according to the trade of the vessel.

Q. (By Mr. Hokanson): Now, assuming you have perfect alignment in these gears and you have lubrication of some type—always assuming that it is contaminated lubricating oil—and the gears are made of steel, do you know from your own experience that will continue to function properly under this condition?

A. No, it would be impossible to know. It could bear up on a test run or a test trial. Does that answer the question?

Q. As you say, nobody knows—and you can't give an answer in terms of how many hours?

A. No, I mean, if you buy contaminated oil, it would probably—well, you couldn't say how long it would last; maybe two months and maybe ten hours.

Q. Have you ever heard of running any gears with water lubrication alone?

A. I don't think I have. I don't see why it couldn't be, however. I know that under certain circumstances it wouldn't hurt them—if they were not abused or if they were not raced. [1029]

Q. Well, if you could use water alone—

A. Well, I am just answering from my experience; what it could do if care was taken.

Q. You said in your direct testimony that even though you had leaks in the coolers you could develop contamination of the oil in two hours.

(Deposition of E. W. Pike.)

Mr. Howard: I don't recall that he made that statement.

The Witness: I don't either.

Q. (By Mr. Hokanson): Well, referring back to what you said with reference to the dock trial, you, I believe stated that you didn't examine the coolers after the dock trial; is that right?

A. Yes.

Q. And I believe you said in that connection they could develop the contamination of oil in that period of time. A. I don't remember that.

Mr. Howard: I don't believe that was his testimony.

Q. (By Mr. Hokanson): Well, I beg your pardon if I am mistaken. My notes so indicated, however.

The Witness: No, I don't remember that.

Q. Now, when you first looked at the lubricating oil cooler, was it attached or was it dismantled?

Mr. Howard: I shall object to that as repetitious.

(Discussion by counsel off the record.)

The Witness: It was still in the vessel and attached [1030] to the engine, but the inspection plate was on.

Q. (By Mr. Hokanson): You say that the inspection plate was on when you first saw it?

A. Yes.

Q. You have reference to the lubricating oil cooler? A. Yes.

Q. Well, is there more than one cooler?

(Deposition of E. W. Pike.)

A. Yes; the auxiliary cooler.

Q. Are there any of the heat exchangers or coolers on the main engine?

Mr. Howard: If you recall.

The Witness: I was just trying to remember my position on the vessel at the time—I don't just remember."

Mr. Howard: I submit that next question, since the exhibit is not in evidence, is inappropriate at this time. Counsel has objected to the admission of that exhibit.

Mr. Hokanson: May it please the Court, since the Court has determined to reserve its ruling on the admissibility of the survey report, I should think that it would be proper, the cross-examination with reference to the report, subject to that testimony.

The Court: Is there any objection? [1031]

Mr. Howard: No, your Honor.

The Court: You may do that, upon that condition.

"Q. (By Mr. Hokanson): Well, referring to Cross-Libelant's Exhibit X-1, which is your survey report, item No. 3—you state that there are thirteen leaks, and you say further two fresh water coolers and one lubricating oil cooler—there were two fresh

(Deposition of E. W. Pike.)

water coolers and one lubricating oil cooler on board? A. Yes.

* * *

“Q. (By Mr. Hokanson): Now, there was a plate for observation of the lubricating oil cooler, and you looked inside the cooler at the time, did you?

A. Yes.

Q. And that was on the salt water side?

A. That was on the salt water side, yes.

Q. You say that there was a certain amount of dirt?

A. Yes. Well, it wasn't perfectly clean, in other words.

Q. But it wasn't excessively dirty? [1032]

A. No.

Q. It was not clogged up? A. No.

Q. And was the dirt in the cooler, from your observation, of an amount that you would encounter in the period of a voyage of 2400 miles?

A. Well, I have never examined one on that basis, but approximately.

Q. Could you tell from looking into the cooler whether there were leaks in it?

A. Not looking into it, no.

Q. Did you look into the lubricating oil side?

A. No, that was when it went to the service company.

(Deposition of E. W. Pike.)

Q. So that you do not know whether the lubricating oil side was clogged in any way? A. No.

Q. The amount of dirt that you found in the salt water side of the lubricating oil cooler was not sufficient to give alarm? A. No, sir.

Q. Do you know how many leaks there were in the lubricating oil cooler alone? [1033]

* * *

“A. I don’t know. I don’t remember.

Q. (By Mr. Hokanson): But your report states that there was a total of 13 leaks in the two fresh water coolers and one lubricating oil cooler.

Mr. Howard: The same objection.”

Mr. Howard: That is objected to as repetitious.

The Court: The objection is overruled.

“A. They reported it to me.

Q. (By Mr. Hokanson): Now, this may be repetitious, but I want to be sure that I understand your testimony—just what your testimony was on direct examination. You stated that the leaks as they were found occurred in the sheets—

A. We call it the tube sheets.

Q. Is that where the tubes are soldered or sweated in one way or another with—

A. That is what I call the tube sheet, where they are fastened together with the manufacturer’s

(Deposition of E. W. Pike.)

make of solder—I will call it solder—and that is all I know.

Q. Now, do you know what the normal operating pressure on the salt water side is?" [1034]

A. I don't remember.

Q. (By Mr. Hokanson): Assuming that the operating pressure on the salt water side of this type of cooler is 7 pounds, and assuming further that a cooler auxiliary pump was used for delivering pressure of 100 pounds, and that pump was operated over a period of time, should that, in your opinion, cause leaks in the lubricating oil cooler?"

Mr. Howard: I object to that question as containing assumptions which are not yet a matter of evidence in this case, in the record of this case.

Mr. Hokanson: The deposition of Mr. Cross establishes that an auxiliary pump was used. The number of pounds pressure that pump would deliver may not yet have been established, but, Your Honor, I submit that there will be testimony and there is testimony in the way of depositions which will establish that fact. By reason of the order of proof I feel that it is proper to include an assumption which counsel advises the Court will be later established by the evidence.

The Court: I do, too. If you promise it will be, the Court will overrule the objection. If the

(Deposition of E. W. Pike.)

promise [1035] is not fulfilled, if counsel will call it to my attention later the Court will make an appropriate ruling.

“A. Well, without examining it closely, that is hard to determine, that is, hard to answer that.

Q. If the lubricating oil cooler became excessively heated, what provision is there in the cooler to allow for the shrinkage of the tubing?

A. The expansion and contraction—that is the way it is built—I don’t know all of the coolers. It is an accepted lubricating oil cooler. That is all I can go by. The make, the manufacture, the design, and all of that is accepted.

Q. Do you know what type of coolers these were? A. I don’t remember.

Q. So you wouldn’t know what the performance reputation of that type of cooler is?

A. No. I even remember seeing the name plate, but I don’t remember what it was now.

Q. Would it be possible in your experience, or in your business, that you could testify to this as an expert——

A. We are not considered the expert. That is our New York office——

Q. In assembling the cooler on the engine——when it [1036] is connected up and the flanges are bolted down, in bolting it down do you think it possible that that could be done in such a way as to cause leaks in the joints?

(Deposition of E. W. Pike.)

A. I don't know of any particular reason off-hand.

Q. And if there was an excessive vibration of the engine?

A. Oh, you could drop it, or excessive vibration, or a hanger not in position or left out.

Q. So those factors might cause leaks?

A. There are lots of possible causes—lots of causes, yes.

Q. Now, you stated that you found some water leaking through the lubricating oil terminal of No. 2 cylinder.

A. That was shown to me, and the gasket was thrown over to me and I threw it away and said to put a new gasket in.

Q. Did you see the gasket removed from the liner?

A. Well, I was right beside it—I was watching it.

Q. And who gave it to you?

A. One of the service men.

Q. Was that gasket on the water jacket side of the lines?

* * *

The Witness: The best way I can state it is that it is between the water jacket side and the cylinder. It is a [1037] gasket that is not supposed to allow water to enter into the cylinder.

Q. (By Mr. Hokanson): Now, this lubricating

(Deposition of E. W. Pike.)

oil leads into the lubricating surface of the cylinder on a thread fit; where are they?

* * *

A. Well, that is a term of our own. It is a threaded unit. It is a terminal that fits in there.

Q. (By Mr. Hokanson): And this gasket was placed on the water jacket side of the liner at the point where the terminal enters the liner; is that correct?

A. Where the terminal enters the liner, yes.

Q. Did you examine the other cylinders to determine whether there were other gaskets leaking?

A. No, sir.

Q. How much water did you find on the inside of the liner?

A. Oh, just in dribbles—probably several tablespoonfuls.

* * *

Q. (By Mr. Hokanson): The water entering the cylinder [1038] chamber through a leak at that point—does it have any effect on the combustion in your engine?

A. Well, it is according to how bad it is. It hadn't ought to.

Mr. Howard: As I understand your answer, it depends on how much water there is?

The Witness: That is right. I didn't see any test for that leak. I just saw a leakage of the

(Deposition of E. W. Pike.)

water and felt of it. I didn't taste it. In other words, that would have been an ordinary voyage repair. That wouldn't be considered anything at all on an ordinary voyage repair, but tying into this, it makes it sound different—but that is what was done at the time.

Q. Could you develop the leaky gasket at that point through vibration?

A. Oh, yes, you could.

Q. Could it occur on a normal sea voyage?

A. It comes within the human element—you put it in and it may be crinkled up when putting it in, but if it is installed properly, I think it would last as long as the rest of the terminal gaskets.

Q. In other words, it is impossible to predict in a case of this kind what might bring about the leak—whether it was a condition that came about naturally over a period of time from vibration, or whether it was defectively [1039] installed at the time? A. Yes.

Q. Mr. Pike, have you ever surveyed any other Union Diesel engines of this type?

A. I have, but as to the type, I mean—that is, whether large or small, or other phases of it, but I have examined them over the years—

Q. Did you ever run into this type of condition before?

A. No; it was a different survey altogether.

Q. You say it was a different survey altogether?

A. Yes.

(Deposition of E. W. Pike.)

Q. You have reference to one particular case?

A. No, several cases——leaky liners or something of another nature altogether. All engines have to go through a four-year period, and I haven't had one on a four-year period.

Q. Now, you went aboard the ship from time to time between November 11th and November 16th, 1948, did you? A. Yes.

Q. You didn't observe all of the work that was done on the engines effecting the repairs, did you?

A. In what way? Do you mean other work on the engine?

Q. Yes.

A. Oh, there was nothing particular——nothing other than this repair that I recollect.

Q. In other words, everything else seemed in order to [1040] you?

A. Yes. They opened up the parts I wanted to see and closed them up, and the thrust valves and the cam bearings——which is on top and away inside on this engine——but I was looking for misalignment. That is what I started up there for.

Q. You didn't actually see the work that was done in making the repairs, did you?

A. Always, yes.

Q. In other words, then, you were present at all times when the——

A. No, I kept——that is, they opened this up under our recommendations and didn't close it until we were satisfied to close it. I don't stand over

(Deposition of E. W. Pike.)

the heads of the service men in their installations.

Q. In other words, you always have them opened for your inspection, but the work goes on in your absence, nevertheless?

A. Yes, that is right.

Mr. Hokanson: I believe that it all.

Redirect Examination

By Mr. Howard:

Q. You were satisfied from your examination initially aboard the Tanker Urania that you could eliminate the possibility of damage to the bearings by pressure? A. Yes.

Q. Or misalignment? [1041]

A. Yes. This engine, as I understand it——this engine was worked on in Mexico some place previous——the same work was done, and the service men are supposed to be the experts, and we were describing it as we took it apart.

Q. Mr. Pike, you stated, I believe, on cross-examination that you found some foreign matter in the sump of the pit when you opened it up. What was that foreign matter?

A. Nobody knows what it was. I mean it was just——

Q. Can you describe it?

A. A mulsified oil and water and a little bit of residue from the crank walls and the bearing surfaces, etc. It all makes just a little soft putty substance.

(Deposition of E. W. Pike.)

Q. And was that what you sampled by tasting?

A. No, sir; that was some water that was there.

Q. Now, the fluid that you sampled by tasting, you had no doubt after tasting it as to whether it was fresh or salt water?

Mr. Hokanson: I object to the question as repetitious."

Mr. Hokanson: This is redirect examination. It is his witness.

Mr. Howard: I was merely trying to touch upon a point that was brought out on cross-examination. I concede that the matter was developed on direct [1042] examination, but having gone into it in such detail on cross-examination, it seems to me it is appropriate to allow this question to be propounded on redirect.

Mr. Hokanson: I don't believe that question was developed on cross-examination.

The Court: I am going to sustain it, because it has been gone into rather fully before this.

"Q. (By Mr. Howard): Was there any doubt in your mind as to whether it was salt water?"

Mr. Hokanson: The same objection, Your Honor.

The Court: The objection is sustained. I am sure that both sides have asked about salt water.

(Deposition of E. W. Pike.)

“Q. Under normal conditions there couldn't be any appreciable amount of water in the sump?

A. No, sir.

Q. Assuming that the gasket from the terminal leading [1043] into No. 2 cylinder had been installed a short time previously and the engine had only been operated, say, for a period of about 500 hours, would you normally expect that gasket to be destroyed? Would you expect it to be in the condition in which you found it?”

Mr. Hokanson: That is objected to as having been covered completely on cross-examination and direct examination. It is repetitious.

The Court: Do you have in mind something special in the cross-examination that was not covered previously?

Mr. Hokanson: Yes, Your Honor. I asked him about the leak in the gasket, whether it was a normal type of thing. Referring back to page 127, I believe that matter is covered very fully. He has given his opinion on that; the question beginning on line 14, page 127, the answer at line 19.

Mr. Howard: I submit, if the Court please, that that is within the scope of proper redirect examination where I am taking up the same subject counsel went into on cross-examination.

(Deposition of E. W. Pike.)

The Court: There are two questions in one, and the answer is "No, sir". It is not easy to tell which one he means, unless he is referring to the last question. [1044]

Mr. Howard: The answer seems to be of no probative value, anyway.

The Court: The objection is sustained.

"Q. Those gaskets last a long time, don't they?

A. Normally——

Mr. Hokanson: I object to the question——

Q. (By Mr. Howard): Well, how long do the gaskets last?

Mr. Hokanson: If you know.

A. I don't know. Some operators have annual inspections and some have their four-year inspection and some don't touch them until they are forced to. We have five years too——that is one year of grace.

Q. (By Mr. Howard): Normally you would expect a gasket to last more than 500 hours, would you not? A. Oh, yes.

Q. You were not in constant attendance on the vessel, were you? A. No.

Q. But you attended as frequently as necessary?

A. As frequently as I considered necessary, yes.

Mr. Howard: That is all.

(Deposition of E. W. Pike.)

Recross-Examination

By Mr. Hokanson: [1045]

Q. Speaking of this gasket, Mr. Pike, was the liner removed?"

Mr. Howard: That is objected to as being repetitious.

Mr. Hokanson: There is no question about liners being removed. It may be objectionable with respect to the scope——

The Court: It is sustained; therefore, omit the answer.

Mr. Hokanson: May I make this observation at this point, Your Honor? This line of questioning appears to be an effort to find out from the witness the exact location of this gasket and how it was removed. It is merely informative more than anything else. I think Mr. Howard will agree.

Mr. Howard: That is true, counsel, but I have been waiving some of my objections as to repetition. I feel if you are going to insist upon objecting to my questioning, I will have to do the same.

Mr. Hokanson: I have no desire one way or the other, except insofar as this testimony might enlighten the Court as to the nature——

The Court: I think all of this has been gone into at such great length, it may be not with this witness as [1046] with others, but at great length.

Mr. Hokanson: I will waive the questions.

(Deposition of E. W. Pike.)

The Court: Does the objection go to the inquiries about the terminal?

Mr. Howard: Yes, your Honor.

The Court: That objection is sustained.

“Q. When did you make your inspection of the bearing of the camshaft?

Mr. Howard: That is objected to as not proper recross-examination.”

The Court: Is there any response?

Mr. Hokanson: No response, your Honor.

The Court: It is sustained.

Mr. Howard: My objection would run to the remaining questions on recross-examination.

Mr. Hokanson: No response.

The Court: Sustained. [1047]

Mr. Howard: That concludes the deposition of Mr. Pike, which I offer in evidence.

The Court: It is received in evidence as a part of the case in chief of the cross-libelant.

Was there any voucher or exhibit relating to the cost of this witness' services?

Mr. Howard: Yes, Your Honor. That comes in a group of vouchers which will be identified in another deposition. We have received the testimony on it.

The Court: Proceed to the next deposition.

Mr. Howard: I would like to read the deposition of Mr. Dupuy, in the same cover, beginning at page 244.

(Deposition of E. W. Pike.)

If the Court please, we are prepared at any time convenient to other counsel and the Court to address the Court on the law relating to the admissibility of this survey report which has been offered; whenever you are ready, counsel.

The Court: You may proceed.

Mr. Hokanson: Does Your Honor have any disposition one way or the other with respect——

The Court: I do not wish to submit it until you are ready to. I prefer to give you an opportunity—I assume from what you have previously said you are not ready. If you are not, we will pass it for the time being. I will say to both sides, it seems to me the [1048] objection goes into the primary question of whether a surveyor's report under any circumstances is admissible over objection. It certainly involves that as one of the primary questions. If you insist that it is not, then that puts the whole subject at large.

Mr. Hokanson: We do not desire to make a further study of the authorities, Your Honor, with respect to this question. My objection as originally noted went to that part of the survey report which involves a statement, comment offered for the proof of the truth of the matter asserted not within the personal knowledge of the person making the report as shown by the testimony given.

The Court: Do you agree that a surveyor's report, as has apparently been agreed between counsel respecting other survey reports offered in evidence

(Deposition of E. W. Pike.)

in this case up to this time, is admissible, generally speaking?

Mr. Hokanson: Where it vouches for the surveyor's written or spoken testimony, I would see no objection to the admissibility of such a report.

The Court: I would be surprised if you would find any surveyor's report that is free from hearsay. Perhaps some are, but I would be very much surprised to find one that is.

Mr. Hokanson: The point that I make, Your Honor, [1049] is to the extent that the report contains hearsay, I feel that it is objectionable.

The Court: Have you any authority on it?

Mr. Hokanson: I have no authorities to submit.

The Court: Have you any authority to support the offer as to the hearsay contained?

Mr. Legros: (The Mason, CCA 2 (1918), 249 F. 718) Judge Hough, speaking for the Second Circuit, 1918, speaking for Justices Rogers and Learned Hand, says:

“In cases of stranding, damage is commonly received in places where no eye can see that which happens at the time of harm, and in the nature of things the best evidence as to what was injured; and often excellent and persuasive evidence as to how the injury occurred, is given and must be given by competent and experienced men who subsequently examine the hurt.”

I submit that a surveyor would never know how the injury occurred unless it was given to him by

(Deposition of E. W. Pike.)

hearsay evidence. Later on, he says: "Such surveys are always evidence, though not conclusive."

The Court: The authority is not conclusive, either, because it does not meet head on the questions here. You should let the Court know how any question is raised in the authorities cited. From all that appears from what counsel has stated, the Court in making those [1050] comments may not have been compelled to make the statement or ruling by reason of any dispute arising in the case. I do not know how the question arose.

I think we are just wasting more time. The matter is passed until both sides are ready to proceed.

Mr. Howard: Page 244.

DEPOSITION OF GEORGE M. DUPUY

"Direct Examination

By Mr. Howard:

Q. Will you state your full name, please, and give your residence address?

A. My name is George M. Dupuy. I live at 1237 Lakme Avenue, Wilmington, California.

Q. What is your business or occupation?

A. I am a marine surveyor.

Q. Do you have any connection with Lloyd's underwriters or Lloyd's Agents?

A. Only on specific jobs.

Q. How long have you been in the business of marine surveyor and engineer?

(Deposition of George M. Dupuy.)

A. Four years.

Q. What was your occupation previous to that time?

A. Marine engineer — seafaring — on seagoing vessels.

Q. What type of vessels did you serve on? [1051]

A. Freighters and tankers and passenger ships; various types of ships.

Q. For how long were you engaged in that occupation?

A. I would say approximately 12 years.

Q. And during that period of time have you ever served on any vessels propelled by Diesel engines?

A. Only in outfitting, during the war.

(Discussion by counsel off the record.)

Q. Mr. Dupuy, do you care to waive the reading and signing of your deposition that is now being taken when it has been transcribed from the reporter's shorthand notes into typewritten form in preparation for the trial of this case?

A. Yes, I will waive the reading of it.

Q. Do you expect to be in Seattle, Washington, or in the State of Washington, on or about April 6, 1949 ?

A. No, I do not expect to be there at that time.

Q. Do you recall the occasion last November when the Tanker Urania called at the port of Long Beach, or Los Angeles?

A. That was in November?

(Deposition of George M. Dupuy.)

Q. Of 1948, yes.

A. That is correct, yes, I recall the occasion.

(Discussion by counsel off the record.)

Q. Did you go aboard the vessel at that time?

A. Yes.

Q. And for what purpose?

A. To make a survey at the request of the underwriters—the owners and the underwriters, regarding damage to the timing gear.

Q. And did you make such a survey?

A. Yes, I did.

Q. And was a report prepared on that survey?

A. Yes.”

Mr. Howard: I will ask to have the clerk mark as the next identification number the survey of Mr. Dupuy, indicated as Claimant's and Cross-Libelant's Exhibit Z-1 to Z-8 in the Los Angeles deposition.

(Survey marked Respondent's Exhibit A-22 for Identification.)

“Q. Handing, you, Mr. Dupuy, what has been heretofore marked by the court reporter for identification as Claimant's and Cross-Libelants Exhibits Z-1 to Z-8, inclusive, will you examine that, please, and tell me what it is (handing documents to the witness)?

A. Yes, this is my survey report on that vessel.

(Deposition of George M. Dupuy.)

It concerns the damage to the engine of the Tanker Urania. [1053]

Q. And that was prepared from the findings that you made while you were aboard the Urania?

A. Yes.

Q. On how many occasions did you go aboard the Urania during her visit last November?

A. Well, I would have to make an approximation.

Q. Yes; just approximately.

A. Approximately three visits.

Q. I am handing you what has heretofore been marked for identification as Claimant's and Cross-Libellant's Exhibit T-39. Can you state what that is (handing document to the witness)?

A. That seems to be the bill for my services."

Mr. Howard: For the record, this last one is identified by the deposition number as referred to in another deposition and will be introduced later, Exhibit T-39.

The Court: Since beginning Mr. Dupuy's deposition, have you had marked another one previous to this?

Mr. Howard: No, Your Honor, that is the only one that has been marked in the Dupuy deposition.

"Q. And what is the amount of that, please?

A. The complete amount?

Q. Yes, the complete total.

(Deposition of George M. Dupuy.)

A. The total is \$154.81.

Q. Now, what is the actual amount of the charge for your services? A. \$105.

Q. Well, how is that fee determined—how do you compute it?

A. Well, you compute it several ways; sometimes by the cost of the damage or the expense, and the number of visits.

Q. Is that the normal charge that would be made in this area for services of the type rendered to the Tanker Urania?

A. Well, it is normal, yes; I suppose it would be normal, yes.

Q. Well, have you been paid for the work you performed? A. Yes.

Q. Now, you have a record of the first visit you made the first time you were aboard the Urania, have you?

A. I am sorry I don't have those notes.

Q. Would your report or survey show that?

A. No, not necessarily—well, yes, in the first visit, yes, the report of the survey would show that—November 11th and subsequently, yes.

Q. Now, will you state, please, what you found as to [1055] the condition of the main engine of the Tanker Urania when you first went aboard the vessel?

A. When I first went aboard the vessel, the engine was opened up.

(Deposition of George M. Dupuy.)

Q. You say it was then opened up—did you observe it being opened up?

A. No, when I first saw it, it was open.

Q. Very well. Now, will you continue?

A. And upon examination of the gears we found the two top and two bottom timing gears on the vertical shaft severely worn—as I state here in my report (indicating document).

Q. Would you say that the main propulsion engine of the vessel could have been operated in the condition in which you found the gears on the occasion of your inspection?

A. No, I would say it would have been inadvisable to operate it in that condition.

Q. Would you describe for us in a little more detail the worn condition of the gears that you have just referred to?

A. As I recall it now, the tooth faces of the gears were severely worn.

Q. Was that uniform on all of the gears or would it vary?

A. It would vary—yes, it would vary.

Q. Would it vary in a particular gear or would it vary as to several gears that you located in groups here— Was it wearing even on one gear around the entire— [1056]

A. That has been some time now, but, as I recall it, it was staggered more or less. At various places it was worn more seriously than in others.

Q. Now, I notice your report, on the first item

(Deposition of George M. Dupuy.)

mentioned, it records that the vertical shaft was placed in a lathe and checked for true. Do you know whether that was done, of your own personal knowledge? A. I witnessed the checking.

Q. And what did you find the condition of the shaft to be?

A. We didn't find any distortion of the shaft. The shaft appeared to be straight, on checking with the lathe.

Q. You set out under "Recommendations," "Engine's timing gears to be checked for true alignment."

Did you witness that checking?

A. Partially. It is quite a long drawn out procedure and I wasn't able to remain there for the entire checking but it was reported to me by—I spoke to Mr. Cross of the Union Diesel Company, who was in charge of the job.

Q. What did you yourself observe as to the alignment of the timing gear assembly?

A. It appeared to be in good alignment.

Q. You have also in your report recommended that the crankshaft deflection readings be taken, and thrust bearings examined. Did you participate in those checks and readings?

A. Well, I haven't that record—those readings, no. [1057]

Q. Do you know of your own knowledge, or was it brought to your notice, whether any deflection was found in the crankshaft?

(Deposition of George M. Dupuy.)

A. It was reported to be in good order.

Q. And you inspected the thrust bearing, did you, Mr. Dupuy?

A. Yes, I saw the thrust bearings also and they appeared to be all right.

Q. Now, your report mentions evidence of salt water in the lube oil system.

Will you please describe to us what evidence you found of this salt water?

A. Well, the only evidence I found was in some pockets of it, and you got the impression that it was contaminated or that there was contamination or emulsified condition of the oil as if it had been contaminated with water. I believe it was assumed that that was salt water.

Q. Did you sample it or taste it yourself?

A. No, I never did.

Q. Now, I note your report indicates that the lubricating oil cooler was found leaking between the salt water cooler and the lube oil side. How did you determine that?

A. It was tested—the lube oil cooler was tested and found to be leaking. [1058]

Q. Was it tested aboard the vessel?

A. Well, I wouldn't want to put that in as a definite statement, but I believe that it was.

Q. The recommendation as to the lube oil cooler is that it should be proven tight under 100 pounds hydraulic test. How did you determine the pressure

(Deposition of George M. Dupuy.)

that was to be used on the testing of the lube oil cooler?

A. I wasn't there at the testing of that. That was done up at the plant where it was overhauled.

Q. The lube oil cooler was removed from the engine room?

A. Yes, taken out of the engine room and taken up and overhauled and a repair made and then tested.

Q. And you recommended that, did you?

A. Yes.

Q. I note that under the column of recommendations you indicate that the lube oil system should be thoroughly cleaned and flushed to remove all steel particles and salt water.

Had you observed some steel particles or some salt water in the system?

A. No, but I considered it should be done. I just considered the condition of the timing gears, but I never considered anything particularly, however.

Q. You have recommended in your report that the timing gears—that new timing gears should be installed. Do you [1059] know whether or not that was done?

A. Yes, it was. They were installed.

Q. Do you know who performed that work?

A. The Union Diesel Engine Company of Oakland, California.

(Deposition of George M. Dupuy.)

Q. And were you present during the course of those replacements of the timing gears?

A. I made visits there.

Q. Were you aboard the vessel during the dock trials? A. No, I wasn't there then.

Q. Or during the sea trials? A. No.

Q. Did you examine the main engine of the Tanker Urania at the conclusion of the dock or the sea trials? A. No, I never did—personally.

Q. From the inspections and examinations that you made of the main engine aboard the Tanker Urania at Long Beach, California, in the month of November, 1948, will you state, please, your opinion as to the nature of the breakdown of the main engine?

A. Well, my opinion was that—on the cause of——

Q. No; I am first inquiring as to the nature of the breakdown; what was the nature of the breakdown?

A. Well, the timing gears, the upper and lower timing gears of the vertical shaft were worn to such an extent that [1060] it was impractical to operate the engine.

Q. That being your opinion as to the nature of the breakdown, will you now state for us, please, your opinion as a result of your experience and your examination of this main engine and the parts thereof—as to the cause of the breakdown?

A. Well, in my opinion from the observations I

(Deposition of George M. Dupuy.)

made of it—the cause of it was the contamination of the lube oil system through the leakage of the cooler.

Q. And is that also based upon the conditions that you actually found to exist aboard the Tanker *Urania*? A. Yes.

Q. Referring now, if you please, to Claimant's and Cross-Libellant's Exhibits Z-4 to Z-7, inclusive, for identification, did you obtain those extracts from the ship's log?

A. I got these extracts from the owner's representative. As I recall, they were written in Greek and they had to be translated, and I obtained the translation.

Q. You had another person translate it for you because you don't read Greek yourself?

A. That is right.

Q. And those translations of the ship's log were obtained from the owner's representative?

A. Yes. [1061]

Mr. Howard: You may cross-examine.

Cross-Examination

By Mr. Hokanson:

Q. Mr. Dupuy, you were hired at the request of both the owners and the underwriters?

A. That was the way it was always stated. The owners contact the underwriters and the underwriters contact us.

(Deposition of George M. Dupuy.)

Q. Who did you actually represent when you made this survey, then?

A. Well, our reports were sent to the underwriters; that is, Best & Company at that time.

Q. You first went aboard the vessel on the 11th of November, as your report shows? A. Yes.

Q. And the engine had already been opened up at the time, had it? A. Yes.

Q. Who was present when you first started your inspection?

A. Mr. Edwin Pike, I believe, and Mr. Harry J. Summers, and Mr. Cross from the Union Diesel Company, and the owner's—I didn't have his name—there was an owner's man there—he may have been the owner himself—I just don't recall now.

Q. Was any examination made of the camshaft by you?

A. Just a visual examination. They lifted the bearing [1062] on the camshaft and we examined it in place.

Q. You didn't turn it over?

A. No, I never witnessed that. It is kind of hazy in my mind—a lot of this. As I recall it, however, all of the camshaft valve levers, etc., were removed, and the camshaft formally examined.

Q. In your presence?

A. Yes—well, I was there and saw it disassembled.

Q. Do you remember how long after you first went aboard that that was done?

(Deposition of George M. Dupuy.)

A. Well, I would rather not answer that. I think it was within the last two days—on my subsequent visits I was there during that period.

Q. You are not sure whether the lubricating oil cooler was investigated aboard the ship or not?

A. I wouldn't say for sure, no, because I wasn't there to witness it.

Q. You didn't see it yourself? A. No.

Q. Well, as I understand it, you didn't actually make any test of the oil that was taken out of the pit or the base of the engine, but you reported that there was evidence of salt water in the lube oil system, which report was based upon what someone else reported to you; is that correct? 1063]

A. That, and the fact there was an emulsified condition of the oil—a condition of oil and water—and due to the fact that the lube oil cooler was leaking; that was conclusive.

Q. Do you know, of your own knowledge, that the cooler was leaking?

A. Yes—I understand they were—I believe.

Q. But you didn't actually see it, did you?

A. No, I wasn't there at the time of the test, as I recall it now. I was there shortly afterwards, and the other surveyors—we have to work there together—but I can't state that I actually saw the leak itself.

Q. Do you know what type of cooler this was?

A. No, I didn't take that nameplate data, or such as that.

(Deposition of George M. Dupuy.)

Q. Your recommendation concerning the lube oil cooler was that it be soldered where leaking, and proven tight under 100-pound hydrostatic test. Why did you recommend that type of test, Mr. Dupuy?

A. Well, we checked the lube oil pressure, as I recall. I don't recall right now what the pressure was; and we usually tested the top by working pressure.

Q. Is that customarily done, to test the cooler at the top by working pressure? A. Yes.

Q. And is that type of repair, I mean soldering, good practice where you have leaks in this type of cooler?

A. It was soldered; as I understand, it was really just resoldered.

Q. Is a hydraulic test a proper test to make to prove the cooler is water tight?

A. Well, there are several forms of test, but that is just as good as any. Some use air and some use water.

Q. It can be done either way? A. Yes.

Q. Would you say it was the practice to test your cooler by air actuated by a pump developing pressure of between 160 to 200 pounds?

A. The only indication, that there would be a relief valve on the cooler to relieve it from the pressure. I don't think it would be good practice to use—for instance, to use a 200-pound test to test 100 pounds. I don't think that would be good practice at all.

(Deposition of George M. Dupuy.)

Q. Well, assume, Mr. Dupuy, that this cooler was put in a solution at boiling temperature and boiled for four hours, and then placed under an air test with the pressure computed to be between 160 and 200 pounds; in your opinion could that spring a leak in the actual testing”?

Mr. Howard: That is objected to as improper cross-examination; [1065] not within the scope of the direct examination.

Mr. Hokanson: The whole question is opened up by the direct examination with reference to the cleaning of the coolers and leaks in coolers. The issue here is one of causation and this is certainly within the reasonable scope. He has testified as an expert to Mr. Howard on his direct examination as to cause.

The Court: The objection is overruled.

“A. Well, if you sprung a leak in the testing, that is what it was put in there for, and if it sprung a leak there you might repair it. It also might have sprung a leak with only 5 pounds pressure on it. I believe that is a test, and evidently they put that much pressure on it constant for the purpose of testing it. That is my opinion. But, as I say, I have no definite data on it.

Q. You wouldn't have the data, but you found

(Deposition of George M. Dupuy.)

that submersion was a first test?

A. Yes, submersion was a first test.

Q. Well, Mr. Dupuy, you knew from looking at the oil that there was some emulsified form of some object? A. That is correct.

Q. And the oil that you observed—do you remember [1066] whether that condition was in various low spots of the pit—is that right?

A. In pockets——

Q. Did you sample any of the oil from the day tank? A. No, sir.

Q. If there was some water in the system, it would settle to the bottom, would it not, and there would be an emulsification of the oil at that point?

A. Well, in explanation—if you got water in your oil, it would more or less stay in solution and emulsify throughout. If you had it settle for any length of time, quite a bit would settle out.

Q. The engine was not in operation when you first saw it, was it? A. No.

Q. And it was not in operation until the tests were completed? A. That is right.

Q. And you didn't see the leaks yourself in the cooler, but that fact was reported to you?

A. That is right.

Q. And from those two factors and from your other examination, you conclude in your report with the statement that, 'It appears that the failure of the timing gears was caused by this condition.'

(Deposition of George M. Dupuy.)

Do you mean by that statement that that is your supposition based upon the factors that I have just developed?

A. Well, after the complete examination of the engine and the testing of the vertical shaft for true, and if that was all that could be found at the time—that was the only determining factor.

Q. Considering the extent of your findings, that was a conclusion that you arrived at?

A. Right.

Q. But there could be other causes for galling timing gears in this type of engine, couldn't there?

A. Definitely.

Q. Very many causes? A. Yes.

Q. Now, do you remember how these gears were supplied with oil?

A. They had copper tubing feeder lines, as I recall it.

Q. Do you remember whether the feed lines for the oil lubricated both the upper and the lower timing gears? A. No, I don't recall that now.

Q. Did you check the oil tubing which services these gears, upper and lower?

A. Only a visual examination.

Q. You mean external? A. Yes, external.

Q. Now, on your report you recommend that at the conclusion of the trials after the installation of new gears they should be examined and checked for true alignment. Did you have some doubt in your

(Deposition of George M. Dupuy.)

mind as to whether alignment might be the cause of the galling?

A. Well, the alignment could very easily be the cause of the galling, due to the fact that they were installing new gears, and it is always good policy to check them.

Q. Then having drawn your conclusion that contamination was a cause, you still had some apprehension about the alignment of the gears after they were installed; is that correct?

A. Well, yes — you have — after the new gears were installed, it was customary to check the alignment.

Q. Well, in other words, in this type of engine, in installing gears, if you make improper adjustments you create misalignment of the gears?

A. Yes, I would say so.

Q. Did you examine the thrust bearings on the vertical shaft?

A. Yes; when they were first opened, I saw them.

Q. What was their condition?

A. They appeared to be in good condition.

Q. Would there be any occasion from your examination to replace those thrust bearings? 1069]

A. No.

Q. Do you know whether they were renewed or not?

A. Well, not as far as I know, they were not.

Q. From your examination of this one engine, what parts, in your opinion, should have been re-

(Deposition of George M. Dupuy.)

placed? A. The four damaged timing gears.

Q. Any further parts? A. No.

Q. That would be, then, the two vertical shaft drive gears, upper and lower, which would be a total of four; is that correct? A. Yes.

Q. Did you examine the vertical shaft base bearing bushing? A. Yes.

Q. Was that in good condition? A. Yes.

Q. It did not require replacement, in your opinion?

A. No, in my opinion, it did not require replacement.

Q. Did you examine two ballbearings—I assume those ballbearings referred to here are those in the thrust bearings in the vertical shaft?

A. Why, I don't recall at the moment those particular bearings. One reason is that I never examined them closely on any occasion. [1070]

Q. Would there be any tubing that would be required to be replaced upon the examination that you made?

A. Only those damaged when it was opened up. They had to cut some tubing, as I recall now, to open up the engine.

Q. Did the cam shaft gear require replacing?

A. That was a spur gear—I don't believe so, no; the camshaft drive was in good condition.

Q. What about the vertical shaft gear?

Mr. Howard: Well, what particular gear, counsel?

(Deposition of George M. Dupuy.)

Mr. Hokanson: If reference is made to the upper and lower gears, I suppose this is a duplication, and I will pass that question.

Q. Did you inspect the lower vertical shaft bearings? A. Yes.

Q. Did they require replacement? A. No.

Q. Did you inspect the filter elements?

A. I did not, no.

Q. Were there any gaskets or any pipe that you inspected that required replacement?

A. I didn't inspect gaskets or pipe to that extent.

Q. Did you look at the fuel lines? A. No.

Q. Were there any valves or gauges that were inspected by you? [1071] A. No.

Q. Did you look at the governor? A. No.

Q. Or the governor crosshead assembly?

A. No, I never.

Q. From your inspection of the damage to the timing gears and your knowledge of how this engine is assembled, would there be, in your opinion, any relationship to the damage to the governor or governor crosshead assembly arising out of the galled condition of the gears?"

Mr. Howard: I object to that question on the ground the witness states he did not examine the governor or governor crosshead assembly in the previous questions and answers.

(Deposition of George M. Dupuy.)

Mr. Hokanson: His answer is that he doesn't know, anyway, he didn't want to make a statement.

The Court: Sustained.

“Q. Was this damage that was found of such a character that it could not be corrected or repaired at shipyards outside of the United States?

Mr. Howard: If you know. [1072]

A. I would say it could be repaired in any up-to-date shop in the world who would have the gears.

Q. (By Mr. Hokanson): Assuming you had the gear parts that were damaged, could it be done aboard ship?

A. Well, under the right conditions, yes.

Q. If I remember your testimony correctly, you stated that you did not examine the gears at the conclusion of the sea trial after the repairs had been made.

A. That is correct.

Q. So that your report which states, ‘At the conclusion of trials, the timing gears were examined and found in good order,’ is based, I presume, on what information you received from someone else?

A. That is right.

Q. Do you remember who gave you that information?

A. Mr. Pike, of the American Bureau of Shipping.

Q. You state that four new timing gears were

(Deposition of George M. Dupuy.)

brought on board as spares. Upon whose recommendation was that done, if you know?

A. I believe it was the owner's, but I wouldn't want to state that positively. I believe it was the owner that wished that, however.

Q. Would you have recommended it had the question been asked you?

A. Yes, I believe I would have recommended it.

Q. I mean, placing the spare timing gears aboard the vessel.

A. Yes, I would recommend that in this case.

Q. Why?

A. Because of the trouble they had experienced.

Q. What is the purpose of bluing the gear tooth faces?

A. They put the blue on one of the gears and rolled it and—that is, the two gears would mesh, and then they would roll the gears around, and if there was one that hadn't been blued, then they were aware that actual contact had not taken place, and it was also done on the opposite gear."

The Court: At this point we will take a ten minute recess.

(Recess.)

"Q. Should that have been done in the case of all mechanical gears that are installed?

(Deposition of George M. Dupuy.)

A. In my opinion, yes.

Q. Why is that?

A. You determine the amount of wear you are getting on the tooth face. [1074]

Q. And that is all related to alignment, is it not?

A. That is correct.

Q. And helical timing gears and all such construction that need alignment must be very accurate in order to avoid excess wear, then; isn't that true?

A. That is correct.

Q. Did you examine the spur gears?

A. Yes.

Q. Were they defective in any way?

A. No, not that I could see anyway. They showed no excess wear.

Q. And they are of a steel type and they will all carry a certain load substantially the same as the said timing gears do? A. Yes.

Q. And they were lubricated by the same oil that the timing gears used? A. Yes.

Q. Can you determine from a visual inspection whether timing gears of this type are properly aligned?

A. The only way I could say to determine that would be if they had been in operation for a while and if they showed an excessive amount of wear—well, there is no other chance to check them through—

Q. Through construction, do you mean? [1075]

A. Construction and bluing, etc.

(Deposition of George M. Dupuy.)

Q. Well, when you first saw the different gears, they were still attached to the engine; is that correct? A. Yes.

Q. Could you determine from an inspection of them in the condition that they were found to be in whether they had been in proper alignment prior to the wearing and galling?

A. I would say no.

Q. You could not? A. No.

Q. So that you would not be prepared to say that those gears were in proper alignment before the galling took place; is that correct?

A. That is correct. I wouldn't be prepared to say that.

Q. And no one else who inspected them in the condition they were in when you found them could state positively whether they were in proper alignment or not; isn't that correct?

A. In my opinion, that is correct. I don't see how anybody could tell whether they were worn out.

Q. Now, Mr. Dupuy, you have had some considerable experience as a marine engineer, haven't you? A. Yes.

Q. Referring to your survey report, Exhibit Z-1 to-8 inclusive, and to page Z-8 thereof, which contains [1076] translated extracts from the engine log of the *Urania*, you will notice, "0800 on October 31; the vertical drive shaft was taken out to a machine shop on shore and checked for bend." It

(Deposition of George M. Dupuy.)

further states that a slight bend was rectified on lower part of vertical shaft. Could the bend on the vertical shaft cause misalignment of the gears?

A. Well, bend on the shaft would cause the gears to run out, yes—that is correct.

Q. And that could cause galling or wearing, could it not? A. Yes.

Q. Could a contaminated oil line leading to these gears result in the galling or wearing of these gears?"

Mr. Hokanson: The last question, beginning at line 14, page 168, I believe contains a typographical error; "contaminated oil line," I believe it was "plugged oil line."

Mr. Howard: I stipulate that should read "plugged oil line," line 14, page 268.

"A. Yes.

Q. By depriving the system of proper lubrication? A. Yes. [1077]

Q. Mr. Dupuy, assuming that the engine of this ship was stopped and it was then discovered after inspection that timing gears were galled; and assume further that the engineers also discovered the oil was very dirty and showed signs of contamination; and assume further that without determining the cause of the contaminated oil the contaminated

(Deposition of George M. Dupuy.)

oil was thrown out and new oil put in, and that new gears were then installed, and the actual cause of the galling of the gears had not been determined, and the engine was then run; would that in your opinion be sound engineering practice?"

Mr. Howard: I would like to enter an objection to that question on the basis that it assumes a fact that the contamination of the lube oil was discovered, and the oil was very dirty and showed signs of contamination as discovered by the engineer when the engine was stopped. I submit to Your Honor there is no evidence whatever in the record that that condition existed.

The Court: Have you a promise to make in that connection similar to the promise made before?

Mr. Hokanson: May it please the Court, I believe there is testimony in the record up to this point establishing that it was known to the chief engineer, at least that there was difficulty with the oil, from [1078] his own deposition. If that has not already been established, I believe that from a construction of all the testimony heretofore given that certainly that fact can be established.

Mr. Howard: You say that it can be established?

Mr. Hokanson: Yes.

The Court: You mean if the Court takes the view of the evidence which you take that is a fact that is established?

(Deposition of George M. Dupuy.)

Mr. Hokanson: Yes, Your Honor.

Mr. Howard: I renew my objection on the ground that there is no testimony in the record that the engineer discovered the oil was very dirty after this breakdown when the engine was stopped. If counsel says he will produce evidence to that effect, with that promise I would abide by the Court's ruling.

The Court: The objection is overruled upon the assumption counsel can point out some such evidence, or inferences from evidence, indicating that fact.

“Mr. Howard: Do you understand the question, Mr. Dupuy?

The Witness: I think I see what he is driving at.

That they never determined the cause of the contamination of the oil? [1079]

Of course, I think that was an error on the part of the engineer, in not determining the cause.

Q. (By Mr. Hokanson): That would be your opinion, would it? A. Yes.

Q. Now, again referring to Claimant's and Cross-Libelant's Exhibit Z-8 for identification, you will notice that it states that the engine timing was commenced on November 1st and continued until 1100 on November 3rd. Is that a normal time that should be consumed in the timing of an engine of that type?

(Deposition of George M. Dupuy.)

A. I would say it was not unusual, when you are renewing gears. In other words, for all renewing of timing gears, it is not unusual that you take considerable time for everyone to take the engine and get it back to the timing.

Q. You will notice that after the thing was completed the engine was run full ahead and operation of the engine was uneven and irregular, and the pistons were hitting the valves.

Now, in your opinion, if the engine was timed properly, would that condition exist?

A. Why no. They would have to adjust the timing again.

Q. When timing an engine of this type, you jack your engine over in effecting a timing, don't you?

A. I believe so, yes. [1080]

Q. And shouldn't great care be exercised in the process of completing the timing, to avoid the condition which developed here after the timing was completed?

A. Yes, precaution should be taken.

Q. Isn't that a very unusual condition?

A. No, I wouldn't say on this design of engine. I am not familiar enough to state that that is unusual in this type.

Q. Well, it would be unusual in most Diesel engines, would it not?

A. I would rather not say.

Q. Well, that condition is a very dangerous one, is it not, as far as damage to the whole engine is concerned?

(Deposition of George M. Dupuy.)

A. Well, this thing of pistons hitting the valves, etc., that don't make sense to me anyway; not in my knowledge of Diesel engines.

Q. It causes certain changes; is that correct?

A. That is right—if you want that conclusion. I don't think it is the timing. In my opinion, I don't see how the timing could cause that condition of the pistons hitting the valves.

Q. Might not any condition be caused if the intake valve were full open on the top center?

A. I am not familiar enough with this design of engine to answer such a technical question. [1081]

Q. Well, assuming that the pistons had hit the valves, wouldn't that cause a severe strain on the camshaft and the timing gears?

Mr. Howard: I will object to the question—the witness has now stated he is not familiar enough with this type of Diesel engine to answer questions dealing in such technicalities.”

Mr. Hokanson: The witness' answer, anyway, is inconclusive.

The Court: The objection is overruled.

“The Witness: I would rather say that I am not familiar enough to make a statement on that.

Q. (By Mr. Hokanson): You did examine the camshaft, didn't you, Mr. Dupuy? A. Yes.

Q. And you saw how it was connected with the timing gears, did you? A. That is correct.

(Deposition of George M. Dupuy.)

Q. And the principle is not essentially different from any other overhead camshaft installed on Diesel engines, is it?

A. No, not that I know of. [1082]

Q. If you are able to state, if a valve were struck by a piston wouldn't the force be transmitted to the rocker arm and to the shaft and back onto the timing gears?

A. I would rather not answer that. I am not prepared to answer that. I would have to study up on that to give you an answer to that question.

Q. Assuming, without requiring you to give an opinion as to that—assuming that there were back thrusts on the timing gears from that condition—could that cause a misalignment?

(No answer by the witness.)

Mr. Howard: Do you understand the question, Mr. Dupuy?

The Witness: Cause misalignment?

Q. (By Mr. Hokanson): —of the timing gears, yes—temporary or permanent?

(No answer by the witness.)

Mr. Howard: Would you like to have the questions read to you again before you answer?

The Witness: Yes.

(The last three questions were read to the witness by the reporter.)

A. Well, it would increase the pressure on the gear faces and cause excess wear.

Q. (By Mr. Hokanson): Do you know what

(Deposition of George M. Dupuy.)

the capacity of the oil system was on the Tanker Urania? [1083]

A. Do you mean the number of gallons in the lubricating oil system?

Q. Yes. A. No, I do not.

Q. Assume that this engine became overheated, and assume, further, that the temperature of the lubricating oil had risen to a level temperature in excess of safe operating procedure; and assume that, in order to bring down the temperature of the lubricating oil, increased flow and pressure of the salt water coolant were directed to the lubricating oil cooler by use of an auxiliary pump; in your opinion could a sudden flow of cool water cause a contraction of the tubes in the lube oil cooler to such an extent that leaks could develop thereby?"

Mr. Howard: I object to that question on the basis of the fact that the assumption that the temperature of the lubricating oil had risen to a level temperature in excess of safe operating procedure, and that to bring down the temperature of the lubricating oil, increased flow and pressure of salt water coolant directed to the lubricating oil cooler, has not been established as a fact prior to the first breakdown, at least, of this engine on this vessel.

The Court: Do you think one might argue from facts proven that the temperature had become excessive?

Mr. Howard: I think the entries in the engine-

(Deposition of George M. Dupuy.)

room logs speak for themselves, the engineroom logs admitted in evidence. I submit the entries will show that the temperature of the lubricating oil had not risen in excess of safe operating procedure.

Mr. Hokanson: Your Honor, I will withdraw the question.

The Court: The question is withdrawn, and the answer, also.

“Q. If there were leaks in the cooler under normal operating pressure on both sides, the lube oil and the salt water, could you get salt water in the lube oil?

The Witness: May I have that again, please?

(The pending question was read by the reporter.)

The Witness: I don't have the pressures. I don't know what the existing pressures were on both sides of that.

Q. (By Mr. Hokanson): Well, in lube oil coolers, which pressure is higher under a motor driven by the pump system—the lube oil side or the salt water side?

A. In most cases, if the equipment is in proper adjustment, the lube oil is the highest. [1085]

Q. And that being the case, assuming the lube oil pressure is higher, even if you have leaks in the cooler, could the salt water get into the lube oil?

A. The salt water can't get into the lube oil under those conditions, no, not while in operation.

(Deposition of George M. Dupuy.)

Q. As an ex-seafaring engineer, Mr. Dupuy, and considering your acquaintance with engine log entries, do you feel that the log, the engine log, covering the period from August 26th through November 11, 1948, is an adequate record of the mechanical difficulties of the Tanker *Urania* on the trip, of what you found upon her arrival?

Mr. Howard: I shall object to that question because the witness has not been shown the engine-room log of the Tanker *Urania*.

Mr. Hokanson: He has been shown what has already been testified to as extracts furnished to him by the owner or a representative of the owner, of the engineroom log."

Mr. Hokanson: Mr. Howard, will you stipulate that there is an error in the last question, that the word August should be October, "from October 26th through November 11, 1948"?

Mr. Howard: Yes, I so stipulate.

Mr. Hokanson: May it please the Court, the report [1086] which has been offered by this surveyor whose testimony is under consideration contains extracts from the log which he has earlier testified to as having been translated at his request. It is with respect to those entries that this question is concerned, and I submit that is a proper question.

(Deposition of George M. Dupuy.)

“Mr. Howard: I have no objection to his answering the question now propounded to him. He does not, however, have the engine room log in front of him.

Mr. Hokanson: You may answer the question, Mr. Dupuy.

A. The translation as written here is free——

Q. Assuming the translation is a literal translation of the entries made, would your answer be the same?

A. Well, I would say that that log is—that it more or less covers the accident—leaving out the minor details.

Q. What is customarily recorded in the engine room log?

A. Customarily temperatures, etc., and any comments on operation of equipment during the period that you are on watch.

Q. Where you have a major breakdown and you have only what you are given from the engine room log of the difficulties that you found when the vessel arrived and was [1087] inspected by you, in your opinion is this engine room log fully explanatory in details which are customarily entered in the normal practice of keeping an engine room log?

A. Well, I would rather not answer that question. It gets too involved. Everybody keeps a log different.

Q. Is it customary to log all oil changes in the engine room log? A. Yes.

Mr. Hokanson: I believe that is all.

(Deposition of George M. Dupuy.)

Redirect Examination

By Mr. Howard:

Q. Mr. Dupuy, counsel has inquired as to the sufficiency of the log entries as reflected in the extracts that were attached to your report or survey, and which is now a part of the record and marked by the reporter for identification as Claimant's and Cross-libelant's Exhibits Z-1 and Z-8, inclusive. Do you know whether the original log as maintained aboard the Tanker Urania carried entries recording the number of revolutions per minute for any particular time?

A. No, I didn't go into any of that.

Q. Now, do you know whether the original log maintained in the engine room of the Tanker Urania carried entries for this period covering such situations as the amount of fuel consumed in the main engine and in the auxiliary [1088] engine and the pressure which is maintained in the lubricating oil system, the fuel oil pressure, the pressure of the fresh water in the circulating system, temperatures of the sea water, temperatures of the pistons or around the pistons, temperature of the lubricating oil in and out of the cooler, and the temperature in the engine room and similar items, as far as the auxiliary engines are concerned?

A. I never saw that log.

Q. You don't know whether a record was made on the original log of such items as that?

A. No, I don't.

(Deposition of George M. Dupuy.)

Q. When you make extracts from an engine room log for the purpose of attaching it to your survey report, do you usually make an extract of all such entries as I have just enumerated?

A. If they are directly concerned with the accident, you do, yes.

Q. Otherwise you do not?

A. No; unless it is concerned in the accident.

Q. At the time you made this survey of the Tanker *Urania* at Long Beach, did you know that a service engineer of the Union Diesel Engine Company had been aboard the vessel on its last breakdown—at the time of the last major breakdown?

Mr. Hokanson: I shall object to that as improper redirect examination."

Mr. Hokanson: My objection is renewed.

The Court: The objection is overruled.

"A. I was told he was on board at the time of the second—do you refer to the second breakdown?

Q. (By Mr. Howard): Yes.

Mr. Hokanson: As the last?

The Witness: Yes.

Q. (By Mr. Howard): And, with that in mind, do you know who determined just what parts were to be replaced by the Union Diesel Engine Company on the Tanker *Urania*? Who determined

(Deposition of George M. Dupuy.)

what parts were to go in? Did you specify what parts were to be replaced.

A. I recommended that four gears be put in.

Q. Beyond that, did you undertake to specify any further repairs?

A. New repairs, no, sir.

Q. Do you know whether the Union Diesel Engine Company's service engineer found it necessary to replace any other parts of the main engine?

A. Not that I know of. [1090]

Q. Now, as a result of that inspection of the engine when opened up upon arrival at Long Beach and the check that was made of the alignment of the vertical shaft, the condition of the vertical shaft—did you then eliminate misalignment as a possible cause of the galling of the gears?

Mr. Hokanson: I shall object to the question in its present form as being leading, and also beyond the scope of proper redirect examination."

The Court: It certainly is leading. The objection is sustained.

"Mr. Howard: After the repairs had been made at Long Beach, including the repair of the lubricating oil cooler, the leaks that were reported in the lubricating oil cooler, did you yourself observe or did you receive any report of any further leaks in the lubricating oil cooler—any further leaks?

(Deposition of George M. Dupuy.)

A. After it was reinstalled in the vessel, do you mean?

Q. Yes.

A. No, sir, I heard nothing further about it.

Q. After this heat exchanger or cooler was subjected to 160 to 200 pounds of pressure while testing it at Long [1091] Beach or Los Angeles, any leaks that might have been discovered then must have been repaired?

Mr. Hokanson: I shall object to the form of the question as leading and beyond the scope of proper redirect examination."

Mr. Howard: I will withdraw the question.

The Court: You may proceed.

"Mr. Howard: I have no further questions.

Recross-Examination

By Mr. Hokanson:

Q. When you said that in your opinion the gears were in proper alignment, in answer to Mr. Howard's question, I take it you have reference to the time after the new gears had been installed."

Mr. Hokanson: If the Court please, his answer to the question on which this question is based has been stricken.

(Deposition of George M. Dupuy.)

The Court: This will be stricken, too.

Mr. Hokanson: Yes. The question beginning on [1092] line 4, page 280—I move that the question be asked subject to whatever objections may be made.

The Court: Is there any objection to starting with line 4, page 280?

Mr. Howard: No, Your Honor.

The Court: You may do so.

“Q. You previously testified that in your opinion it could not be determined whether there was any misalignment of the gears prior to the galling, in the condition you found them when you inspected it; is that right?

A. Prior to the galling, did you say?

Q. Do you understand my question?

A. Whether the gears were installed originally in misalignment; is that it?

Q. Perhaps I can simplify my question——

A. Well, I don't know that.

Q. You don't know that? A. No.

Q. You couldn't tell whether they were in proper alignment prior to the time the galling occurred or not? A. No.

Mr. Hokanson: I think that is all.

Mr. Howard: That is all. I have nothing further.” [1093]

Mr. Howard: That concludes the deposition of

(Deposition of George M. Dupuy.)

Mr. Dupuy, which I offer in evidence at this time as part of the cross-libelant's case in chief.

The Court: It is so received in evidence.

Mr. Howard: I would like next to read into evidence the deposition of Mr. Harry J. Summers, beginning at page 194 of the same cover.

DEPOSITION OF HARRY J. SUMMERS

"Direct Examination

By Mr. Howard:

Q. Will you state your full name, please, and your place of residence?

A. My name is Harry J. Summers. I live at 1217 Leland Street, San Pedro, California.

Q. And what is your occupation?

A. I am a retired marine surveyor.

Q. And how long have you been in the marine surveying business?

A. I have been with the American Bureau of Shipping for thirty years and two months as principal surveyor in this port.

Q. And when did you retire?

A. The first of March, 1948.

Q. Since that time have you acted independently as [1094] a surveyor on occasions?

A. Yes; I have taken a few small investigating jobs and brief survey work—just at the request of some friend who wanted me.

Q. Mr. Summers, do you expect to be in the

(Deposition of Harry J. Summers.)

State of Washington on or about April 6, 1949?

A. No, sir, I do not.”

Mr. Howard: The witness waives reading and signing the deposition. Line 21, page 195.

“Q. Mr. Summers, in the month of November, 1948, did you perform some services as a surveyor in connection with the tank vessel *Urania*?

A. Yes. The report I made is dated November 19, 1948.

Q. At whose request did you perform the services?

A. At the request of the General Steamship Corporation, agents for the owners of the vessel.

Q. And on whose behalf were you acting in performing these services?

A. Well, I take it that I would be working for the owners of the vessel.

Q. And where was the vessel located at that time? [1095]

A. At the Craig Shipyards, at Long Beach, California.

Q. When did you first investigate the vessel?

A. My first attendance was on November 11, 1948.

Q. Were you present when the vessel arrived at the Craig Shipyards?

(Deposition of Harry J. Summers.)

A. No; she came into the yard and went to the dock, and I saw it there.

Q. State whether or not any other surveyor or technical representatives were present at the time you did inspect the vessel on November 11, 1948.

A. Yes, there were others who attended the boat. There was Mr. E. W. Pike, representing the American Bureau of Shipping; Mr. George M. Dupuy, representing Lloyd's agent—he is a local surveyor—because Lloyd's regular surveyor was incapacitated and he acted for him; and then there was a man by the name of Cross representing the Union Diesel Engine Company; and there were two other men, I believe, from the Engine Company.

Q. And what did you do when you went on board the vessel? Was there some particular portion of the vessel that you were concerned with, as far as survey was concerned?

A. The vessel had developed main engine trouble and was required to be towed in, and so I was requested to attend for the opening up and examination of the main engine.

Q. And that was your assignment on this occasion? [1096] A. Yes.

Q. And were you concerned with any other repairs or service furnished to the vessel at Los Angeles, or Long Beach?

A. No, I would say that we were concerned only as far as the main engine was involved. There was a boiler or something that was being placed aboard

(Deposition of Harry J. Summers.)

the ship, but I paid no attention to it whatever, and had no part in its examination or testing.

Q. Your services, then, were confined to the main engine and the conduct of any repairs received? A. That is right.

Q. Can you state for us, please, what condition you found the main operating engine on the Tanker Urania to be in when you first inspected it on November 11, 1948?

A. The first thing we saw was some galled gears in the timing gears; that is, those that operate the cam shaft.

Q. And were the gears opened up at the time you first saw them, or were they still in place aboard the vessel?

A. Well, when I saw the gears, as I recall it now, there had been a previous set of gears installed and they were out on the floor plates.

Q. The previous gears were out on the floor plates, did you say?

A. Yes; those were damaged and badly cut up, and then the other gears were being removed when I got down there, [1097] and they were subsequently examined and found to be badly cut and worn.

Q. But they were still being removed when you got there, were they?

A. Yes; the workmen were around there, and there was no point going to look at them in there when they were to be taken out.

Q. Now, first, as to the other gears you observed

(Deposition of Harry J. Summers.)

on the floor plates in the engine room, the previous set of gears, can you identify them as to what gears they were?

A. They were the helical gears from the vertical shaft.

Q. State, if you know, what the condition of those gears was—from your observation.

A. I would say they were destroyed because of excessive galling and cutting.

Q. Were both the upper and the lower gears destroyed or damaged?

A. Yes, they were destroyed or badly cut and galled.

Q. What was the nature of the galling or cutting on these gears that you observed on the floor plates of the engine room of the Tanker Urania?

A. The nature——

Q. Yes. Was the galling and cutting regular or uneven?" [1098]

The Court: May I interrupt you? Do both counsel agree or disagree as to whether or not the helical gears were the same as the timing gears?

Mr. Hokanson: I believe we are in agreement that the timing gears are helical gears, the term helical gears describing the type.

The Court: Do you agree that this witness was referring to one and the same gears when he spoke one time of the timing gears being galled and the other time of the helical gears being galled?

(Deposition of Harry J. Summers.)

Mr. Hokanson: Yes, Your Honor.

The Court: Is that your understanding?

Mr. Howard: That is my understanding, Your Honor.

“A. Well, I think the appearance of the first gears paralleled the appearance of the second set of gears, as far as I remember.

Q. Let's look at the first set of gears on the floor plates.

A. You mean the nature of the cutting or galling?

Q. Yes, if it was even or uneven.

A. No, the cutting on those gears, as I recall it, was irregular and spotty, as you can term it. In fact, on one side of the gear there would be perhaps severe cutting [1099] and on the other side of the gear it would be tapered off and not so bad, but very irregular.

Q. By the way, do you know what eventually happened to those gears on the floor plates of the engine room? Do you know what disposition was made of those gears?

A. I do not. They were removed from the ship, maybe—I don't know.

Q. As to the gears of that main engine that were in the process of being dismantled when you inspected them, state what the condition of those gears was.

(Deposition of Harry J. Summers.)

A. The cutting and galling was irregular on those gears also.

Q. Both upper and lower gears? A. Yes.

Q. Was the damage to the lower gears greater or less than the damage to the upper helical gears, if you know?

A. Well, I would say that the upper gears, as I recall it now—the upper gears were perhaps a little worse—in a little worse condition than the lower ones were.

Q. Now, do you know what happened to those gears that were in the process of being removed from the main engine when you inspected it?

A. Do you mean the final disposition of them?

Q. Yes. Were they left aboard the vessel?

A. They were, as far as I know. They were being [1100] handled by the Union Diesel Engine people.

Q. Do you have in your possession any gears that were removed from the vessel?

A. No, I do not.

Q. Did you inspect any other portions of the main engine on this occasion of your first inspection aboard the vessel?

A. We took this vertical gear out and took it to the shop and tested the shaft in a lathe, and it ran true. It was not out of alignment as far as the shaft thrust was concerned.

Q. Were you present at the time?

A. Yes, I watched it done.

(Deposition of Harry J. Summers.)

Q. Well, the shaft was placed in a lathe and then what test was made?

A. It was tested in the lathe with indicators that show if there is any misalignment or any changes in the shaft, and the shaft was found true.

Q. Can you describe for us the size and general nature of the vertical shaft that you are referring to—the dimensions, etc., as close as you can recall?

A. Well, the shaft was about an inch and three-eighths in diameter.

Q. An inch and three-eighths? A. Yes.

Q. And how long, approximately?

A. Oh, approximately about 50 inches. Mind you, this is just a picture I am giving you. I didn't measure the shaft.

Q. I am just asking you for your best estimation on it. A. Yes, that is right.

Q. And of what material was the shaft constructed?

A. It looked to me like it was probably made of carbon steel.

Q. Did you inspect any other portions of the main engine?

A. I examined the crank case and found the water in the oil.

Q. In the crankcase? A. Yes.

Q. How much oil was in the crankcase at the time of your examination?

A. Well, not an operating amount. It had been partially drained out, but we found evidence of salt water in the oil.

(Deposition of Harry J. Summers.)

Q. How did you determine that there was water in the fluid on the crankcase?

A. Well, that is a matter of samples that they had—it showed water in them.

Q. Was any particular test made of those samples?

A. I think there was, but I did not see a laboratory analysis on it or the test results. I didn't see that [1102] personally. But I did do this—one of the boys had a sample of the oil there which I assumed was dipped out of the crankcase. I wasn't there when he did it, but I assume that he got this oil from there, and he brought it up to me as a specimen of the oil, like we do sometimes if we have a suspicion of salt water, and we dip our finger into it and taste it; and in this instance there was evidence of salt, and so there must have been considerable salt."

Mr. Hokanson: I move to strike the answer as not responsive.

The Court: The motion is denied.

"Q. Well, what did they do on this occasion?

A. They did the same thing on this occasion—from this sample that they brought to me. Ed Pike brought it up to me.

Q. And you tasted the sample, did you?

(Deposition of Harry J. Summers.)

A. Yes, I tasted the sample.

Q. Did you feel that by that method you could determine whether there was salt or fresh water in the sample?

Mr. Hokanson: I shall object to the form of the question, since it involves the emotion of the witness and is not based on fact." [1103]

The Court: Thae objection is overruled.

"Mr. Howard: You may go ahead and answer, Mr. Summers.

(Discussion by counsel off the record.)

The Witness: May I have the question read, now?

(The pending question was read by the reporter.)

A. Yes; but such determination should be further confirmed by a laboratory test.

Q. (By Mr. Howard): Do you know whether that was done in this case?

A. I believe that it was done, but I did not personally see the results.

Q. You never saw the report?

A. No. In fact, we didn't prepare——"

(Deposition of Harry J. Summers.)

(Survey marked Respondent's Exhibit A-23 for Identification.)

“Q. Now, Mr. Summers, I am handing you what has heretofore been marked by the court reporter for identification as Claimant's and Cross-Libellant's Exhibit Y for identification. Can you state what that is, please (handing document to the witness)?

A. That is a report that I made on November 19, 1948, in connection with this particular damage and survey.

Q. And is that report—does it represent your findings as a result of your attendance on the vessel in question? A. That is correct.

Q. And to whom was that report submitted?

A. By me it was turned over to the General Steamship Corporation.

Q. Did you present a statement for the services that you had rendered in this connection?

A. I rendered them a bill, yes.

Q. I show you now what has heretofore been marked by the reporter as Claimant's and Cross-Libellant's Exhibit T-2 for identification, and I will ask you to state what that is, please, if you know (handing document to the witness).

A. An invoice for the charges in the amount of \$200.

Q. And that covers your services, does it?

A. Everything of my services, yes.

(Deposition of Harry J. Summers.)

Q. And has that bill been paid?

A. Yes, I have received payment.

Q. And how were your charges for these services computed?

A. Rendered on the number of visits and the time, that is, based on the number of visits. [1105]

Q. Well, do you have a record of the number of visits that you did make to this vessel in question?

A. Well, now, let's see if I do have that. I would say five or six visits. I remember the first day was on Armistice Day. That is the day the ship arrived, and there wasn't too much going on. Say six visits all together.

Q. Now, does this fee of \$200 as set forth in Claimant's and Cross-Libelant's Exhibit T-2 for identification, represent your usual charge for similar services? A. Oh, yes.

Q. State whether or not that corresponds to the prevailing rate for that type of service in the Los Angeles area.

A. Yes. There has been no criticism.

Q. Well, if similar services were being rendered to another vessel over corresponding services you rendered on the Tanker Urania, state whether or not the fee would be different.

A. No, it would be just the same.

Q. Now, going back, Mr. Summers, to your inspection of the vessel, will you state whether you inspected any other portions of the main engine on your initial visits aboard the ship?

(Deposition of Harry J. Summers.)

A. We examined the bearings of the vertical shaft.

Q. What condition did you find the bearings of the [1106] vertical shaft to be in?

A. Satisfactory.

Q. Was there any evidence of damage to those bearings? A. No.

Q. Please continue.

A. We examined the other chain of gears operating from the main crankshaft, which are plain spur gears, and these were not found to be damaged.

Q. Did you examine any of the cylinders?

A. One cylinder, I think—the No. 2 cylinder—if that is the one that had a leak around the fuel injection, and that leak had been repaired when I saw it, and it was considered satisfactory.

Q. Do you know what repair had been made at that point?

A. Well, it was—I don't know just the details of that repair, but anyway they tested it and there was no water coming out, and it was considered satisfactory as far as I was concerned.

Q. Did you examine the main engine crankshaft?

A. Just superficially, because the crankcase was open, and what I saw was satisfactory—I did not open any bearings.

Q. Did you examine the thrust bearing?

A. Do you mean the main thrust?

Q. The main thrust bearing, yes.

A. I don't recall—yes, the main crankshaft and

(Deposition of Harry J. Summers.)

thrust bearings were checked and checked for alignment, and found satisfactory. I wasn't there at the time the alignment was checked, but I had a look at it, and it seemed to be the consensus of opinion that the alignment was satisfactory, and I didn't put any restrictions on it myself.

Q. Did you inspect or examine any other essential parts of the main engine of the Tanker *Urania*?

A. Well, just the—there was some lubricating oil coolers and some fresh water coolers that had developed leaks.

Q. And what did you find in the lubricating oil cooler on your inspection that you made?

A. Well, the lubricating oil coolers—Now, here is another point I want to make clear on the lubricating oil situation. I wasn't there when those things were under pressure. The boys found some leaks in them, and they said, "Now, we will take them off of the engine and send them to the service people who manufacture this stuff, and have them cleaned and tested and repaired and reinstalled in good order."

Mr. Hokanson: I move to strike that as not responsive and based upon hearsay, Your Honor.

The Court: I think it should be stricken. It is stricken. [1108]

Mr. Howard: That sentence beginning, "The boys found"—?

The Court: Yes, "Here is another point I want to make clear.

(Deposition of Harry J. Summers.)

Mr. Hokanson: I think that the part that should be stricken is beginning with, "I wasn't there when those things were under pressure."

Mr. Howard: If the Court please, that is entirely responsive.

The Court: The striking will commence, "The boys found some leaks"—, and will continue for the rest of the witness' answer.

"Q. Who found the leaks?

A. The Union Diesel Engine men did."

Mr. Hokanson: I object to the answer as involving hearsay again. The ultimate fact is; were there leaks? He states somebody else found them. He states earlier that he wasn't present; therefore, it is hearsay. I move to strike the answer.

The Court: I do not know, Mr. Hokanson, that that [1109] is a necessary conclusion. All the persons around the job at the time may have acted as though the Union Diesel engine men did make the finding, and if their actions indicated as such, this man might state what the fact was.

The objection is overruled.

* * *

"Q. You yourself didn't find the leaks, then, did you?

(Deposition of Harry J. Summers.)

A. I didn't locate the leaks—I couldn't see them—but when they had one of the coolers out, as I recall, there was some leaks in the top sheets. They are a light constructed affair.

Q. Were the lubricating oil coolers opened up when you first went aboard the vessel? A. No.

Q. Was the cooler still in place?

A. It must have been because this was a couple of days after.

Q. Were there any other parts of the main engine that you have not previously mentioned that were subjected to an inspection and examination by you prior to the performance of repairs in Long Beach?

A. No, our examination was concentrated on the gears—what [1110] caused the trouble and what we should do to get it repaired and get the ship going. So we didn't go—After we found what we thought was the meat of the trouble, why, of course, we didn't go into the thing for a much further analysis.

Q. Was any effort made to operate the main engine of the Tanker Urania upon arrival at Long Beach and while you were aboard? A. No.

Q. Did you consider it possible to operate the vessel?

A. Not with the timing gears that were in her when she came in.

Q. Now, did you continue to attend on the vessel during the course of the repairs? A. Yes.

Q. And will you state, if you know, who made the repairs on the main engine?

(Deposition of Harry J. Summers.)

A. The Union Diesel Engine people had mechanics on the job supervising the carrying out of affairs. And the Craig Shipyard people did some of the incidental work.

Q. What repairs were made on the main engine at Long Beach, to your best knowledge?

A. New gears and two new thrust bearings were supplied and installed, and new governor cross-heads and new lubricating oil lines. [1111]

Q. Now, the new gears which you have mentioned, and which you also mentioned in your report which is now identified as Claimant's and Cross-Libellant's Exhibit Y for identification herein—just what gears are you referring to?

A. The helical gears on the vertical shaft.

Q. Both upper and lower?

A. Those are part of the engaging gears.

Q. And the thrust gears you referred to——

A. They were on the same shaft.

Q. On the vertical shaft, do you mean?

A. Yes; that is as I get it.

Q. The governor crosshead was replaced; can you state why it was necessary to replace that part?

A. I did not check that. It was in the recommendation of the engine people.

Q. You have indicated that new lubricating oil lines were supplied. In what portions of the engine were those lines installed?

A. These new lubricating oil lines were installed by the Union Diesel Engine Company's engineers

(Deposition of Harry J. Summers.)

for the purpose of insuring adequate supply to these particular gears that gave trouble. They just directed the flow of oil more particularly so as to be sure that they received proper lubrication. [1112]

Q. Do I understand that when you referred to the lubricating oil lines that they were installed to the gears on the vertical shaft?

A. Yes, to the assembly—yes; and that was done, I believe, when they installed the first set of new gears.

Q. Would that have been done prior to the arrival of the vessel at Long Beach?

A. Yes, that was done prior.

Q. Were you aboard the vessel after the repairs were completed and during the time that the dock and sea trials were conducted?

A. I was on the vessel during the dock trial.

Q. Will you state the manner in which the main engine performed or operated at that time?

A. Satisfactorily at that time.

Q. How long were the main engines operated on that occasion—approximately?

A. I don't know for how long they were run, but I know I was there when we started up, and we run for half an hour, or from the time I went uptown to Long Beach and I came back again, and it was still running, and everything was in order.

Q. During the dock trials did you test the oil in the crankcase? A. No.

Q. Did you make any effort at that time to

(Deposition of Harry J. Summers.)

determine [1113] whether or not there was any contamination of the lubricating oil?

A. The lubricating oil was completely renewed after the repairs. The crankcase was completely cleaned out, and what lubricating oil was there was drained out and new oil supplied.

Q. During the dock trial did you check——

A. No, I didn't go into that any further.

Q. Did you check to determine whether there was any difficulty with the gears on the vertical shaft?

A. Well, we examined the gears after the run and we found no indications of galling or marking or excess wear or anything that indicated that it wasn't all satisfactory and it seemed to be quite in order.

Q. By the way, Mr. Summers, are you a graduate engineer? Do you hold an engineering degree?

A. You mean a college degree?

Q. Yes.

A. No, I have never completed my full college. I started at Ann Arbor and attended the University of Michigan for a short time.

Q. What course did you take?

A. Engineering; but that was a long time ago.

Q. When was that, incidentally?

A. Well, let's see; that was about 1902. [1114]

Q. Do you hold a license, either an engineer's license or a deck license——

A. I don't have a marine engineer's license. I

(Deposition of Harry J. Summers.)

have a license from the State of Illinois as a steam engineer, however.

Q. Now, you stated that you have been in the surveying business in this locality for at least thirty years.

A. That is right.

Q. Principally for the American Bureau of Shipping?

A. Entirely for the American Bureau of Shipping.

Q. Up to the time of your retirement?

A. That is right.

Q. During that period of time will you state whether you have had occasion to inspect or survey other Diesel engines?

A. Yes, I have; I have examined quite a number of Diesel engines during that experience.

Q. Can you give us any idea as to how frequently you have been called upon to examine Diesel engines?

A. Well, I don't know what you mean by frequently. I have examined Diesel engines—on Standard Oil ships and on American-Hawaiian ships, and on Japanese ships.

Q. Have you ever been called upon to examine Diesel engines on tugs?

A. Well, only during the time of construction.

Q. How about fishing vessels?

A. Oh, I have had very little experience with fishing vessels and the smaller Diesel engines. It

(Deposition of Harry J. Summers.)

has been mostly higher powered Diesel engines that I have inspected.

Q. Have you had any experience with reference to Diesel engines inspected for the Union Diesel Engine Company?

A. No, I would say not. There may have been some vessels go through my hands with Union Diesel engines in them, but I can't specifically name them.

Q. Incidentally, what is the type of state engineering license that you hold?

A. Well, it is a steam engineer's license.

Q. Do you know what the pressures are that are prescribed by the manufacturer to be maintained on the lubricating oil coolers on either the lubricating oil side or the salt water side?

Mr. Hokanson: Generally or specifically—as to what coolers?

Mr. Howard: On the lubricating oil cooler—as prescribed by the manufacturer.

Mr. Hokanson: Are you referring to any coolers?

Mr. Howard: On the Union Diesel Engine Company's unit that was installed aboard the Tanker *Urania*.

A. No, I wouldn't know that, because usually the Diesel engine manufacturers supply instruction books with specific [1116] directions for the operation of their products, and it would be a matter of reading it, and everybody knows it.

Q. Do you know whether such an instruction book was carried aboard the Tanker *Urania*?

(Deposition of Harry J. Summers.)

A. I didn't see it. I can't answer that question.

Q. During the time that the Tanker Urania was in Los Angeles, or rather at Long Beach, did you have occasion to observe the chief engineer in the performance of his duties from time to time?

A. Well,—that is one of the things I usually looked for—is the competency of the chief engineer, and my impression of this man was——

Q. No; just a minute. You did observe the man, did you? A. I observed the man, yes.

Q. Did you see him during the course of the repairs on the main engine?

A. Yes, I saw him around a good deal.

Q. And was the chief engineer present and performing his duties during the dock trial?

A. Oh, yes.

Q. State from your experience and from your observation whether you consider the chief engineer aboard the tanker Urania to have been experienced in the operation of Diesel engines." [1117]

Mr. Hokanson: I object to that question, Your Honor, on the ground that from observing, mere observation, it is impossible for even an expert to state whether a man is competent to operate a particular engine. That doesn't imply what he knows about it or whether he is acquainted with the operating techniques involved.

Mr. Howard: I think this witness has qualified himself to express an opinion as to the competency

(Deposition of Harry J. Summers.)

of the chief engineer and whether he was competent to operate the engines. He said he saw him during the course of the work and observed all steps of the repair.

The Court: I may be running the risk of calling to my assistance in ruling upon the question the usual interest that was displayed by marine surveyors towards the ship personnel who are chiefly interested in the defects under consideration.

It seems to me, from what I would observe generally in life about the work of a marine surveyor, that he is usually pretty well interested in who is interested in the defect, and it is inconceivable to me that the marine surveyor wouldn't scrutinize the chief engineer rather strictly on an occasion like this, but I will hear Mr. Hokanson in any further statement he may wish to make. [1118]

Mr. Hokanson: Just this further observation: the vessel was not under way during this observation; therefore, the chief engineer was not subjected to the test that any man in charge would be on a vessel under way. He stated here that he was there at the dock trial. There is a vast difference, as Your Honor well knows, between operating under way at sea and merely undergoing repairs in port.

The Court: Does the question arise in a manner different from the way it has arisen in connection with other similar questions? There have been other objections like this to other questions, have there not? The Court has ruled in other similar situations.

(Deposition of Harry J. Summers.)

Mr. Hokanson: I believe Your Honor has overruled me before.

The Court: I believe it should be overruled. I will say to you that I do not imagine the Court would be swept off its feet by the power of the answer in this respect. I will just consider it for what it is worth as I will any other testimony. Try to have in mind the circumstance that this witness was not aboard very long and may not have observed this man very long.

“A. My opinion was that he was a good chief engineer, [1119] because he had an interest in the job. He came up in the shop to check the shaft in the lathe and observed all of the steps in the repairs, and seemed very interested indeed.

Q. From your experience and also from your observation of the chief engineer aboard the Tanker *Urania*, would you say that he was qualified to operate the engines of that vessel?

A. I would say that he was a good and competent engineer, yes.

Q. Would you say that this chief engineer was capable of and was actually discharging his responsibilities in connection with the maintenance and efficient operation of the main engine?

Mr. Hokanson: I shall object to the form of the question because it does not incorporate the facts

(Deposition of Harry J. Summers.)

as to what the maintenance was that was conducted during the period of this witness' observations."

Mr. Hokanson: My objection, Your Honor, is set forth.

The Court: I would be a little more inclined to consider this. He may have been drunk at the time, I do not know, and the scope of the question covers some period of time before the day or days when the witness was observing the engineer, is that not true? [1120]

Mr. Hokanson: I believe my objection——

The Court: I believe this objection should be sustained. I do not see how he could know how he was performing his duties on some previous day. I think it is enough that he observed his competency to do the job.

"Q. (By Mr. Howard): Would you say the man was competent to handle his responsibilities as chief engineer?"

Mr. Hokanson: I object to that as repetitious.
The Court: Overruled.

(Deposition of Harry J. Summers.)

“A. I would say so, yes.

Q. Now, Mr. Summers, will you please state your opinion from your experience and from your actual inspection and your observations aboard the vessel, as to the nature of the breakdown of the main engine on the Tanker Urania as it appeared at the time of its arrival—the arrival of the vessel at Long Beach on November 11, 1948?

A. What do you want me to say other than what I have already specified in this written report (referring to [1121] document marked Claimant's and Cross-Libelant's Exhibit Y for identification)?

(Discussion by counsel and witness off the record.)

Q. You may refer to your survey report, which is now identified as Claimant's and Cross-Libelant's Exhibit Y for identification, in answering the question that I propounded to you, and if possible I would like to have you amplify the remarks you made in that written report?

A. Now, may I have that question again, please?

(The pending question was read by the reporter.)

A. In answering that—you specified the arrival. We didn't do too much about it upon arrival, but as the examination progressed and we began to develop evidence enough to form an opinion. I would say that the gear failure was the primary cause of the failure of the operation of the propeller machinery; and now we have to perhaps theorize or we have to

(Deposition of Harry J. Summers.)

express an opinion, which is merely an opinion, because there are so many sides to it, and we may or may not be correct in the opinion.

However, my opinion is that the failure of these gears was due to lack of proper lubrication.”

Mr. Hokanson: That is objected to as not responsive.

Mr. Howard: I take that up in the next question. I have no objection to having that part stricken.

The Court: The last two lines of the answer are stricken.

“Q. I am sorry to interrupt you, Mr. Summers, but my question only inquired as to the nature of the breakdown that you found after the arrival of the vessel at Long Beach. I intend to ask you as to your opinion as to the cause of the breakdown, but in this question I am merely inquiring as to what your opinion was from your examination as to the nature of the difficulty.

A. Entire failure of the gears, period.

Q. Can you identify those gears?

A. The helical gears of the vertical shaft.

Q. Now, Mr. Summers, referring to the same time of the inspection that you made aboard the Tanker Urania after its arrival at Long Beach and the conditions that you found as a result of your

(Deposition of Harry J. Summers.)

survey of the main engine, and keeping in mind your previous answer as to the nature of the breakdown that you state was found; will you kindly state your opinion as to the cause of the breakdown or the failure and the damage or destruction of the helical gears of the vertical shaft?

A. In my opinion the gears failed because of faulty [1123] lubrication rather than misalignment. There are two causes in my opinion that contribute to this failure; in fact there is even a third cause, and that is metallurgy. But in this case it is my opinion that the gears failed because of faulty lubrication.

Q. Can you state, please, what factors entered into the opinion which you have given as to the cause of the breakdown that you have just expressed?

A. From my observation, I would say that the lubricating oil was contaminated because of leakage in the heat exchangers of the lubricating oil coolers. You wouldn't have to get very much salt water in the oil to make it so that it isn't a very effective lubricant.

Q. You have previously stated, Mr. Summers, and your report which is now identified as Claimant's and Cross-Libelant's Exhibit Y herein shows, that a leak was found in the No. 2 cylinder, which was repaired. Will you please state whether such a leak would in your opinion have been a cause or contributing cause of the breakdown of the main engine which we have heretofore described?

(Deposition of Harry J. Summers.)

A. Well, any leak that would add water to the lubricating oil system would contribute to the contamination of the oil.

Q. Where did the water developed in the leak of No. 2 cylinder drain to? [1124]

A. This was along the fuel oil. Have you got a diagram of that engine here?

Q. I am sorry, we haven't got one with us. It was used as an exhibit and it is up at Oakland now.

A. I think you had better get that stuff from the engine manufacturer—someone who is competent to pass on that. I just visualize the thing as the picture comes to my mind. There are so many different types of engines.

Q. After the repairs had been made on the main engine at Long Beach in November, 1948, and the trials had been conducted, did you then consider the engine to be in a satisfactory condition for the vessel to proceed on her voyage?

A. Yes, and I so stated.

Mr. Howard: That is all. You may cross-examine.

Cross-Examination

By Mr. Hokanson:

Q. Mr. Summers, your survey report which is marked now Claimant's and Cross-Libellant's Exhibit Y for identification contains conclusions based upon information you received from other persons, does it not?

(Deposition of Harry J. Summers.)

A. It does not as far as the—What point are you building up there? Which paragraph or which statement do you refer to, please?

Q. Well, let's take, for example, paragraph 4, where you state, "Serious leaks found in lubricating oil coolers [1125] and in fresh water coolers, which were dirty and clogged up."

A. Well, my statement with regard to that was, I told you I didn't see this under pressure, but after one of those coolers was taken out I did see it and noticed that the top had started to leak and—well, it was broken away sufficiently to be leaking.

Q. Do you remember which cooler—

A. It was a lubricating oil cooler that I have reference to.

Q. And you say you examined it?

A. I just saw it as the fellow was carrying it out, and I stopped him and said, "Let me see that," and I took a look at it, and the fellow went on with it and carried it on out.

Q. Could you see any breaks or cracks or any indication of leak when you examined it?

A. The point that the boy pointed out to me which was leaking—it was one of these tubes, and they looked like—the place he pointed out looked like it was patched and would have reason for leakage.

Q. I suppose you were looking at the lubricating oil side. A. The outside.

Q. A cross-section of the lubricating oil side?

(Deposition of Harry J. Summers.)

A. That is right. [1126]

Q. You say the boy pointed out to you this fact. Who do you mean by that?

A. Well, one of the men that was carrying one of the coolers; one of the Union Diesel Engine Company men who removed it.

Q. Well, did you look at both sides of the cooler?

A. No.

Q. Which side did you look at?

A. Just the outside. It was apparent when they were carrying it out.

Q. Well, Mr. Summers, is it not true that there are two sides that may be looked into; one side is the one to which the salt water flows and the other side is the one to which the lubricating oil flows; now, which side did you look through?

A. The lubricating oil side.

Q. And that is the only side you looked into?

A. That is right.

Q. And you observe here in your report that the coolers were dirty and clogged up.

A. That was simply told to me. I didn't see too much of it.

Q. You didn't see the dirt—you didn't see that it was clogged up?

A. No, I didn't see where it was clogged up, except [1127] that that was reported to me.

Q. Who reported it to you?

A. In a conversation with the Diesel Engine

(Deposition of Harry J. Summers.)

man, as I remember it, and then with Pike—he was in on that, too.

Q. Then again you say, “Main engine crankshaft and thrust bearing were checked for alignment and found satisfactory.” You didn’t make that actual test yourself, did you?

A. I was aboard ship when it was being done. I didn’t handle the instruments, but I was down there.

(Discussion by counsel off the record.)

Q. (By Mr. Hokanson): Mr. Summers, I notice in paragraph 5 of your report, which, as I said, has heretofore been marked as Claimant’s and Cross-Libellant’s Exhibit Y for identification, that you say at the end that faulty lubrication contributed to the failure of the gears——

Do you mean by that that it was one of several contributing factors?

A. Well, just remember, sir—I say contribute to the failure of the gears, because—Of course, when this report was written, we had no idea the thing was going to be brought up for scrutiny, such as this is going through in a legal manner—And so the language of the surveyor must be so as not to get himself too fouled up with other experts—but in my opinion, off or on the record, it is that faulty lubrication was what destroyed the gears. [1128]

Q. In your answer to one of Mr. Howard’s questions you said that you—this was a matter of theory only, and at that point I believe he directed

(Deposition of Harry J. Summers.)

your attention to the fact that he asked you only as to the nature of the breakdown. Now you have something further to say about the theory here?

A. Oh, I think what I had in mind was with regard to the cutting of the gears. You know, somebody might theorize that faulty lubrication would make a very uniform wearing of the gears, if you please, and then again you would say that if it was irregular that it might possibly be due to misalignment and you would say that that was a contributing cause; but in my opinion without misalignment you can still have irregular cutting of gear surfaces due to faulty lubrication, if you please, or no lubrication, all due to the metallurgy of construction.

Q. Any one of those might cause it?

A. Yes.

Q. And also overloading of the gears the binds—would that cause it? A. What?

Q. By some bind in the system—say a tight bearing or a valve sticking, or something of that character. A. And irregular load?

Q. Yes.

A. Well, gears should be designed to carry all loads [1129] with a certain safety factor, both top and bottom, and my thought that I am trying to get over is that an uneven wear of gears does not necessarily specify misalignment. That is just an opinion of an old engineer and an observer—that is all.

(Deposition of Harry J. Summers.)

Q. Now, if the gears were carrying more than they were designed to carry by reason of some extra burden on the engine——

A. It might give shaft deflection.

Q. Might it also cause galling?

A. Anything that may contribute to deflection might contribute to galling, I would say.

Q. Could you determine, when you found the gears badly galled as they were, according to your testimony, when they are still on the shaft—could you determine whether there was actual misalignment or proper alignment in those gears?

A. No, I don't think you could tell while they were on the shaft, because, if you are going to check misalignment, that is a misalignment of bearings—not the gear fit. I would say that to develop misalignment you have got to have misalignment of shaft or bearing or something to cut these things, or you wouldn't find anything wrong with the bearings or the shaft.

Q. If you had a bend in the shaft—could that cause misalignment or galling?

A. I would say if the shaft was bent so that it deflected [1130] the position of the gear that that could cause it, yes.

Q. Well, once you start a galling, it increases as it gets out of line? A. Yes.

Q. You start a chain of events and it keeps aggravating itself?

A. It gradually gets worse, of course.

(Deposition of Harry J. Summers.)

Q. Now, in your opinion, could mistiming of the engine to the effect that the pistons were hitting the valves create just the additional burden in thrust or stress on the gears as to cause the galling?

A. You are getting into a very technical situation here—the timing of firing.

Q. Yes?

A. In my opinion, the timing of the firing would only be out of time and out of adjustment after these gears became defective and worn.

Q. Assuming, Mr. Summers, that after new gears had been installed and the timing of the engine had been completed——

A. Readjusted——

Q. ——readjusted, so that the engine was run full ahead and the timing was off to the extent that the pistons were hitting the valves, could that cause, in your opinion, such distortion or weight on the timing gears as to cause galling? [1131]

A. If your engine is out of step, so to speak, that means your fuel economy or your whole engineering cycle is wrecked, so far as I could say. I don't get the point—That timing shaft would have to be completely out of—because of such a situation as that—it would have to be completely out of line and out of step and just in bad order, I would say.

Q. Mr. Summers, how long would it take, under normal circumstances, to retime an engine of the type that the Tanker Urania had?

(Deposition of Harry J. Summers.)

A. You mean from inception, to fix the thing and start from scratch and set it up? You want to know how long it would take to do that?

Q. Yes.

A. Well, that is a Union Diesel engine, and I am not exactly familiar with the adjustments of all of these systems—To say how long it would take a mechanic,—well, in the first place, if you had a good mechanic who understood the engine, he could probably do it in one-fourth the time of the poor engineer that had to go along and pick it out by trial and error.

Q. In terms of hours, do you have any opinion as to how long the timing should take?

A. This particular engine—I have no right to make an estimate, because I just simply don't know. I had [1132] possibly better not say because I just don't know.

Q. Should it take more than one day?

A. Oh, well, just as an opinion from a man not too thoroughly familiar with it, I would say that one day would be plenty of time—adequate time.

Q. Now, Mr. Summers, assuming that the timing gears wore out on this vessel and new gears were installed, and that three days were consumed in timing the engine; that after the timing was completed the engine was run full ahead, and the pistons were hitting the valves and the engine acting erratically; what is your opinion as to the competency of the persons who conducted the timing of the engine?

(Deposition of Harry J. Summers.)

(Discussion by counsel and witness off the record.)

Mr. Howard: Let us have the question. Mr. Reporter, will you read the question?

(The pending question was read by the reporter.)

Mr. Howard: Do you understand the question, Mr. Summers, and does the question have in it the necessary assumptions upon which you can base an intelligent answer?

The Witness: Well, after all, Mr. Howard, I am just a marine surveyor; I am not a Union Diesel Engine installing engineer, so if I answer that question it might have sort of a ridiculous aspect. You are putting me on a technical spot that I don't know much about. [1133]

Q. (By Mr. Hokanson): Do you have any opinion?

A. I would rather not express it, if I may be excused from so expressing it.

Q. But you have an opinion, do you not?

(No answer by the witness.)

Mr. Howard: The witness has stated that he doesn't care to express an opinion, and I don't believe we ought to ask him to go any further on that.

The Witness: Well, I have a theory built up on opinion, but I don't think it should be considered as actual fact. I still don't care to express it."

(Deposition of Harry J. Summers.)

Mr. Howard: The question was never answered, was it?

Mr. Hokanson: "Well, I have a theory built up on opinion, but I don't think it should be considered as actual fact. I still don't care to express it" is what the witness says.

"Q. (By Mr. Hokanson): Mr. Summers, have you ever heard of any reliable or competent engineer timing a Diesel engine by jacking it over by hand and adopting the usual mechanisms involved in timing, and when he finished the job he then ran the engine full ahead and the pistons were hitting the valves——

A. No, I would say I never heard of such a thing.

Q. Speaking of your observation of the engineer, the chief engineer on the Tanker *Urania*, you stated that your opinion as to his competency was based merely on the interest he showed in what was being done in respect to the repairs.

A. That is correct.

Q. You also stated, didn't you, that after you had made certain preliminary inspections you thought you had got to the bottom of the cause of the damage and didn't pursue a further analysis, in contemplation that the issue of the cause of that damage might be litigated?

A. That is right—that is right.

Q. So that you could have made a much more thorough examination of the engine had you known

(Deposition of Harry J. Summers.)

that the question of the basic cause was to be litigated? A. That is correct.

Q. Now, from your examination of this engine and from what you have learned about its construction, could you say whether it would be necessary to renew the governor cross-head and do certain additional work on the governor as the result of the gears having been galled?

A. I took the renewal of the governor cross-head as a recommendation of the engine builders, who were supposed to know their engines, and not on any observations of my own.

Q. In other words, you couldn't say whether the removal of those parts is related to the galling of the gears? [1135]

A. Not on the governor.

Q. You mentioned that you looked at the spur gears on the crankshaft, and that they were all right. What gears were those?

A. Those were that chain of gears on the crankshaft, and then the idling gears next to that, and then there is a third set of gears after that—next to that—there is just a string of plain gears—the gears that I examined were all right.

Q. Were those steel gears? A. Yes.

Q. And what do they do?

A. They transmit the power from the crankshaft to the vertical shaft—and there was nothing the matter with those gears, and so we didn't go into them too much.

(Deposition of Harry J. Summers.)

Q. Did they connect with the helical timing gears? A. Through a shaft.

Q. Do they carry the same load as the vertical timing gears?

A. If they are in the system, I would say so.

Q. Well, they are lubricated by the same system? A. Yes.

Q. And you state that there was nothing wrong with them? A. Practically nothing.

Q. No galling? [1136]

A. No; nothing that I saw wrong with those gears that would cause me to investigate them further.

Q. Now, the main gears—some of them were examined and found to be all right; is that correct?

A. Yes, they were examined. I didn't personally get in the crankcase and check up on the main bearings, but they were considered all right.

Q. And the helical timing gears which were galled—they are of very heavy construction, are they not?

A. Yes; pretty rigid and pretty rugged construction.

Q. And how wide a space do they have, approximately?

A. Three and a half or four inches would be my guess.

Q. Now, assuming, Mr. Summers, that you have all your main and crank bearings and your cam system lubricated by the same oil, and assuming

(Deposition of Harry J. Summers.)

that all the bearings were found to be in good order, including the spur gears, excepting, however, the timing gears—in your opinion could the faulty lubrication wear or gall the timing gears only without affecting the other parts? A. Yes.

Q. Have you ever seen that condition obtain in any other engine?

A. I cannot give you a specific case, but the action of the helical gears—that is different from your straight gear assembly—— [1137]

Q. Isn't it true, Mr. Summers, that the babbitt bearings which are your main and crankshaft bearings, carry the main thrust or weight of the engine?

A. Oh, yes, your main bearings, sure, they carry the big load.

Q. Well, isn't it true that babbitt is a much softer and more susceptible of wiping out than case hardened steel?"

Mr. Howard: I will waive my objection.

"The Witness: You want me to answer now whether the babbitt metal is softer than the steel in the shaft, etc.?"

Mr. Hokanson: I think the question should be read back.

Mr. Howard: Yes.

(The pending question was read by the reporter.)

(Deposition of Harry J. Summers.)

A. It is more susceptible to wiping out because your case hardened steel would not wipe out; it would crumble and fall apart.

Q. If there was ordinary lubrication to the helical timing gears and they were in perfect alignment, they should operate for some time without wearing out, shouldn't they?

A. Yes, faulty lubrication should cause a galling or a spalling of the teeth in the helical gears and the [1138] continued spalling and the continued grinding would serve to destroy those gears in a comparatively short length of time after the first failure of any one tooth; that would be my opinion. After all, these things are locked up in a gear case. There are no examination glass windows through which you can look and see what happens.

Q. Do you know what the capacity of the lubricating oil system was on the Tanker Urania?

A. You mean gallons? That is, just the lubricating oil system—what number of gallons would it take?

Q. Yes. A. No, I didn't take that down.

Q. Mr. Summers, I am handing you what has been previously marked by the reporter for identification as Claimant's and Cross-Libellant's Exhibit S (handing document to the witness).

A. Yes.

Q. I will ask you to read on this exhibit the analysis of the oil shown thereon, and tell me whether in your opinion that oil would be of suffi-

(Deposition of Harry J. Summers.)

cient viscosity to lubricate properly the main engine of the Tanker Urania.

Mr. Howard: Now, I am going to ask the witness to read the entire exhibit before answering the question, because I would like to ask him a question when he has read it.

Have you read the exhibit in its entirety, Mr. Summers? [1139]

The Witness: Yes, I have.

Mr. Howard: Have you ever seen that document before?

The Witness: No.

Mr. Howard: Did you have anything to do with its preparation?

The Witness: No.

Mr. Howard: Do you know the gentleman whose name appears at the bottom of the document?

A. I do not.

Mr. Howard: Did you request such a report to be made?

The Witness: No.

Mr. Howard: That is all. You may continue.

Q. (By Mr. Hokanson): Are you prepared to answer my question now, Mr. Summers?

A. In regard to this (indicating document)?

Q. Yes.

A. Your question is, Does the——”

Mr. Hokanson: May it please the Court, do you know what document is referred to here?

(Deposition of Harry J. Summers.)

The Court: I have seen the exhibit. The document, other than that one clause excepted by the Court, has been received in evidence as Respondent's Exhibit A-20.

Mr. Hokanson: It is my understanding that Your [1140] Honor has not yet admitted that document and had asked for further authority on it. That is the oil analysis report.

The Court: The exhibit has on it the notation by the clerk that it has been received in evidence. "The above sample represents oil scooped from bottom of the crank chamber and probably was contaminated by accumulation of rust brought about by water leaking into the oil system."—my recollection is that the Court excluded from admission into evidence that statement. The document is otherwise before the Court.

"Mr. Howard: Would you like to have the question read back to you?

The Witness: Yes, I think so.

(The question at page 233, line 20, was read by the reporter.)

A. The origin of this specimen is very vague—I don't know——

Mr. Hokanson: May I interrupt, Mr. Summers?

The Witness: Yes.

Q. If you can answer my question without taking into account the source of the specimen which

(Deposition of Harry J. Summers.)

is analyzed there, I would appreciate your answering my question, just assuming [1141] for the purposes of the deposition that this oil was in the Tanker Urania.

A. I would say, just as an opinion, not as an oil expert, you know, that an oil of this viscosity would be adequate to lubricate the main engine.

Q. Thank you. Now, do you believe that the camshaft of this engine required substantially constant driving force to rotate it?

A. Constant driving force?

Q. Yes.

A. Yes, I would say constant driving force to rotate it.

Q. That being the case, would you expect excessive wear would be rather evenly distributed on the gears?

A. On the damaged gears?

Q. Yes.

A. I would expect uniform wear until the first galling or the first damage on some certain tooth.

Q. So that if an extraneous object got into the gears and chipped a tooth, do you think that in the chain of events that would cause galling of an irregular character?

A. That seems reasonable; some piece of some metal in there would start a chain of events.

Q. Now, Mr. Summers, did you check the alignment and thrust of the camshaft other than check the camshaft personally so that you wouldn't

(Deposition of Harry J. Summers.)

know whether the camshaft [1142] bearings were checked for bind?

A. May I say something here just off the record——

Mr. Howard: It is all right with me.

Mr. Hokanson: Well,——

(Discussion by counsel and witness off the record.)

The Witness: I did not check the camshaft; that was the last question?

Q. You wouldn't know, then, whether the camshaft bearings were checked for bind or not, would you? A. I do not know that.

Q. Mr. Summers, would it be good engineering practice, in your opinion, to adopt the following procedure: Assuming that the helical timing gears have been galled and worn; assume that it is also discovered that the oil is dirty and of a color which would make the oil suspected as a lubricating agent; assuming that the oil was then changed and new oil put in; assuming then that the gears were replaced and the engine run, without making a check to determine the source or cause of the bad oil which was removed——

A. The gears have started to gall, you say?

Q. Yes, the gears have already been galled, requiring replacement."

(Deposition of Harry J. Summers.)

Mr. Howard: I will now enter an objection to the [1143] question on the basis of it containing an assumption that the oil was discovered dirty and of a color which would make the oil suspected as a lubricating agent, which I submit is not a matter of record from the evidence that has been submitted in this case to date.

Mr. Hokanson: May it please the Court, the theory upon which the cross-libelant proceeds here is that the oil was contaminated by the infiltration of salt water through leaking coolers.

The record shows by the chief engineer's deposition that upon the first breakdown he removed the oil. The record then shows new gears were installed. I submit, Your Honor, that there is an inference from the evidence already in the record and from evidence that will hereafter be called to the Court's attention that the fact of the condition of that oil, if the oil was the basic cause, was then known to the parties effecting the repairs.

The Court: I understand Mr. Howard to object specifically to this sentence in the supposititious question: "assume that it is also discovered that the oil is dirty and of a color which would make the oil suspected as a lubricating agent." Is that the line to which you object?

Mr. Howard: That is the line I am referring to. [1144]

The Court: What is the evidence that justifies the statement of that condition in this question?

(Deposition of Harry J. Summers.)

Mr. Hokanson: May I ask Mr. White to read from the chief engineer's deposition?

Mr. White: For Your Honor's information, reading from the deposition of the chief engineer Baxevanis, which has already been read in evidence; on page 106 is the best indication of it.

"Q. What do you think would have happened if you had operated it with iron filings in the lubricating oil?

A. I would have ruined the engine, that is the filings, the iron filings, would have ruined the filter, etc., and of course when there was no lubrication the parts would become more worn out. There was oil, but it was dirty and full of iron filings?

Q. Had you changed the oil at Manzanillo?

The Court: Is he stating a fact there when he makes that statement, that the oil was dirty and had iron filings in it?

Mr. White: Yes, Your Honor. "There was oil, but it was dirty and full of iron filings."

The Court: What about the color of the oil? Do you know where that evidence in the record is, the color of the oil which made it suspect as a lubricating agent?

Mr. Hokanson: Mr. S. W. Newell, vice president of [1145] The Union Diesel Engine Company, in his deposition stated that in his conversations with Mr. Cross, they discussed the oil and concluded that the oil was at fault. He states that that

(Deposition of Harry J. Summers.)

conversation was had when Mr. Cross was at Manzanillo.

Mr. Cross' testimony is not entirely consistent. He states he found the color of the oil to be brown after the second breakdown, but there is evidence in the record which would lead—at least, it is of sufficient evidentiary weight to draw an inference that the fact of the color of the oil was known to the parties involved in the repairs.

The Court: That is not stating the fact, as you do in this assumed condition, that the oil is of a color which would make it suspect as a lubricating agent. You stated in effect that the color of the oil made it suspicious.

Mr. Hokanson: Both Mr. Cross and Mr. Newell——

The Court: Did either one of them call it brown in color?

Mr. Hokanson: Both of them called it brown in their testimony.

Mr. Howard: Yes, Your Honor, but it is my recollection that that testimony related to a conversation between Mr. Cross and Mr. Newell by radiophone after the [1146] ship had left Manzanillo and was at sea and probably after the second breakdown. Furthermore, this question here must relate to the time of the first breakdown there when the gears were replaced at Manzanillo, because he goes on with the assumption that the gears were replaced. There was no replacement of the

(Deposition of Harry J. Summers.)

gears at sea after the second breakdown, so we must tie this in with circumstances existing at Manzanillo.

The chief engineer said at page 106, "There was oil but it was dirty and full of iron filings," which, it seems to me, is entirely separate from the condition that the oil was dirty and of a color which would make the oil suspected as a lubricating agent, because the gears had been galled and obviously there were iron filings in the oil as a result of the galling of the gears.

The Court: Didn't someone comment upon the color of the oil, in effect, that it was of a color that indicated it had some kind of water in it?

Mr. Howard: Yes, Your Honor, and Mr. Newell, as I recall his testimony, said he advised Cross on the radiophone to dump the oil and change it.

The Court: Do you remember what he said about color in that connection? Didn't he say something about a brown color? [1147]

Mr. Howard: There was reference to that, but as I recall, that was after departure from Manzanillo, after the vessel was at sea en route to Los Angeles.

I have one place that I can refer the Court to now in Mr. Cross' deposition, reading from the bottom of page 50, line 25:

"Q. Mr. Newell testified that you discussed the possible causes of the galling of these gears and stated that you had determined that the oil was

(Deposition of Harry J. Summers.)

brown and you both concluded that would be caused by water, do you remember that conversation?

A. Yes, that was after I left Manzanillo, after the second breakdown.

Q. When did you leave Manzanillo?

A. Approximately five p.m., November 3rd."

Mr. Hokanson: I will not insist upon the point, your Honor. I think that the question embraces certain assumptions which are in the record, and if counsel feels that the inclusion of the words "brown oil" is sufficient to disqualify the answer, I am willing to withdraw the question to settle the controversy.

The Court: The question and answer are withdrawn.

Mr. Howard: I believe, counsel, that would extend to the following question on page 237.

Mr. Hokanson: Your Honor, I do not agree. I think [1148] the next question at line 17 is perfectly proper, notwithstanding Mr. Howard's contention that Mr. Cross discovered the condition after——

The Court: I think it should start at line 17, because the answer depends upon the statements in some preceding question, is that not true?

Mr. Hokanson: Yes.

The Court: You may begin reading at line 17, page 237.

Q. Well, if the oil is dirty or in appearance contaminated, there are certain obvious sources to look for as the cause; isn't that right?

(Deposition of Harry J. Summers.)

A. Yes; if you have contaminated oil, you have got to determine the cause of the contamination and correct it.

Q. Well, you wouldn't be correcting a suspected fault by merely replacing the gears that were worn out, if you didn't check the cause of the contamination of the oil itself; isn't that right?"

Mr. Howard: My objection runs to that question, if the Court please, referring back to the objection to the question on page 236. We are referring now to a [1149] time when the gears were replaced, and that has to be at Manzanillo or Long Beach.

Mr. Hokanson: Your Honor will recall that the chief engineer in his deposition stated that the oil was dirty and that he changed it in Manzanillo. Mr. Cross came aboard and the oil had already been flushed out.

The Court: That does not respond to the point made by Mr. Howard in his last statement, that that question involves the one that has been ruled out.

Mr. Hokanson: I submit the chief engineer was put on notice if he said the oil was dirty when he removed it at Manzanillo.

The Court: Does the witness who had to answer the question at line 23 have to have in mind the conditions which have been objected to and sustained in regard to the previous question?

Mr. Hokanson: I submit he does not.

The Court: I am inclined to agree. I believe

(Deposition of Harry J. Summers.)

this is independent. The objection is overruled. Read the answer at the top of page 238.

Mr. Howard: May it be understood that my objection continues as to the subsequent questions dealing with the same subject?

The Court: Does opposing counsel so agree?

Mr. Hokanson: I agree, your Honor.

The Court: It is approved by the Court.

“A. That is right, yes.

Q. Now, would it also be good practice, in your opinion, assuming the facts that we have already assumed in the previous question and answer, to run additional lube lines to the gears that were galled?

A. What was this with respect to the lube lines; with regard to all of the other conditions you want to ask my opinion about? Well, in my opinion, those lines were run because they felt that the gears were not getting sufficient lubrication, and so the additional lines were installed so as to eliminate that possibility.

Q. Assuming it was known to the person who installed the additional lubricating lines that the oil that had just been removed was contaminated, would putting in additional lines to these gears help the specific cause of the galling?

A. Not unless he changed the oil. If the oil was bad, it just isn't good lubrication.

Q. Well, assuming that the oil was changed, but that the cause of the contamination of the removed oil had not been looked into, would it be good prac-

(Deposition of Harry J. Summers.)

tice to put in additional lines to these gears? [1151]

A. An engineer would do that, feeling that a localized condition existed, and that they might have continued to have trouble and he was trying to create insurance against that.

Q. In other words, it would be possible to have a clogging in some of the lines to these gears; is that correct?

A. If I get what you mean—any line can become clogged from some source or other, but this man probably said there wasn't adequate oil coming to those gears and he assumed that the best way would be to put in the lines so as to be very sure that sufficient oil would go to the proper places through the gears.

Q. Mr. Summers, if each of the lubricating lines leading to these gears had been clogged up, could that cause a galling of these gears?

A. Yes—lack of oil would.

Q. In other words, lack of oil or starvation of lubrication at that point could just as likely have been the cause as any other cause that has been suggested in your testimony?

A. Yes, lack of oil or lack of lubrication is just the same as lubrication with oil with water in it.

Q. Did you note the appearance of the engine apart from the inspection of the interior parts?

A. Of the specific involved parts, do you mean?

Q. Yes. [1152]

A. Well, of course, the main engine as it ap-

(Deposition of Harry J. Summers.)

peared to me looked like any other engine which was partially torn down and was up for examination and all of that.

Q. Did you make an examination of the air, lube, and water lines?

A. No, I didn't make such an examination.

Q. Or of the tubing I have referred to?

A. No, the tubing gets out of full view, but what I saw was all right, but I didn't trace any lines to see about this and that.

Q. Well, did you notice or did you check the lines or the tubing which led to the vertical timing gears which were galled, that is, the lubricating oil lines on the original system? A. No.

Mr. Hokanson: That is all.

(Discussion by counsel off the record.)

Redirect Examination

By Mr. Howard:

Q. Did the fact that there were service representatives and other representatives of the engine manufacturer present at the time of your inspection have any bearing on your report?

A. No.

Mr. Hokanson: I shall object to the question as not [1153] being within the scope of redirect examination.

Mr. Howard: He testified on cross-examination that the representatives of the engine manufacturer were present."

The Court: The objection is overruled.

(Deposition of Harry J. Summers.)

“Q. Were you relying upon them to any extent, that is, the representatives of the engine manufacturer, to determine the extent of the repairs necessary to the main engine?

A. No. We just simply saw that the involved parts, that is, the damaged parts were being replaced and that the defective heat exchanger system was corrected—the cooling system was being corrected. And with renewed parts and correct lubrication, we felt that the job was adequate with which to proceed to seat.

Q. Now, these timing gears that you have been describing—were they of the same design and engineering principle as these other gears that you have been talking about in connection with the question as to whether you found similar damage or galling on the other gears; were the timing gears of the same design?

A. Yes, the first set of gears and the second set of gears appeared to have parallel damage. [1154]

Q. In the vertical shaft? A. Yes.

Q. But when speaking of other gears in the engine that did not sustain this damage—were they helical gears?

A. No, they were straight gears.

Q. They operated on a different engineering principle, did they? A. Yes.

Q. Would that have any effect on the amount of pressure or weight of the bearings that was carried by those gears?

A. Well, in my opinion, I think it is generally

(Deposition of Harry J. Summers.)

conceded that a helical gear has one difference: opportunity for a grinding motion in the helical gears that would not obtain in a straight spur gear. There is an additional frictional proposition there.

Q. What is the customary method of determining the grade of lubricating oil used?

Mr. Hokanson: If you know.

A. Well, the engineers who design an engine with a train of gears and with certain bearings—they have to determine together with the lubricating engineers the type of oil that is required for the lubrication of the engine. That is a very highly specialized thing which is developed by the manufacturers of the engine.

Q. Did you look at the manufacturer's manual to find [1155] out what really was planned to be used?

A. To the manual, yes; that is what we would ordinarily look to.

Mr. Howard: That is all.

Recross Examination

By Mr. Hokanson:

Q. Aren't helical gears more efficient than spur gears?

A. Now, you are getting into the gear man's province. Helical gears, in my opinion, are designed to fit certain situations, and the way this engine is set up the designer found that helical gears were essential and more simplified as a medium for power to the camshaft.

Does that answer your question?

(Deposition of Harry J. Summers.)

Q. No, it doesn't. My question was, Aren't helical gears, by virtue of the nature and design, more efficient than spur gears?

A. They certain would be to transfer power around an angle the way they do it.

Mr. Hokanson: I have no further questions.

Redirect Examination

By Mr. Howard:

Q. Mr. Summers, are you related to the Mr. Summers of Merrit,, Summers & Bucey, attorneys, of Seattle, Washington? A. No, I am not.

Mr. Howard: That is all. [1156]

Mr. Hokanson: Nothing further from this witness."

Mr. Howard: That concludes the deposition of Mr. Harry Summers, which I offer in evidence as a part of cross libelant's case in chief.

The Court: It is so received.

Mr. Howard: Your Honor, I am going to reserve my offer on these last several exhibits until we can do a little research this evening.

The Court: I wish both of you would do some research on the general admissibility of marine surveyor's reports. If you have some such reference to the general law, where it can be picked up, I think I would like that now.

Mr. Howard: We found one reference in *Corpus Juris*, I am not satisfied it is the only one. Volume II, under Admiralty, Section 139 at p. 263.

The Court: Is it C.J.S.?

Mr. Howard: Yes, your Honor. Particularly under footnote 49.

The Court: What is the Hough decision?

Mr. Le Gros: Rogers and Learned Hand, the three of them were on that case. There is an earlier case, in 1934. [1157]

The Court: You are not responding to my question about the Hough decision.

Mr. Legros: He is looking it up now. I will give you an earlier case: City of Chester, 39 Federal Reporter p. 429.

The Court: That is quite ancient.

Mr. Legros: That is the one Judge Hough used as a basis. 249 F. 718, the Hough decision.

The Court: Court is adjourned until tomorrow morning at 9:30.

(At 4:55 o'clock p.m., Wednesday, April 13, 1949, proceedings adjourned until 9:30 o'clock a.m., Thursday, April 14, 1949.) [1158]

April 14, 1949—9:30 o'clock a.m.

Mr. Howard: We have agreed with counsel for the libelant on a stipulation which will serve to limit some proof here, which we would like to announce to the Court at this time.

This is with reference to the damages claimed by the cross libelant and refers to expenditures at Los Angeles. The stipulation we propose is agreeable to all counsel. The vouchers have not yet been marked.

Let it be stipulated that Exhibit A-24, consisting of invoices and vouchers for disbursements at Los Angeles in the total sum of \$1409.89 represents items and services purchased and furnished to the tanker *Urania* during November, 1948; that the cost in the case of each item is reasonable, and each of said invoices has been paid by or on behalf of the claimant shipowner and may be offered and admitted in evidence in this case.

It is further stipulated, however, that nothing is conceded by cross respondent with respect to the necessity of the items represented by the invoices and vouchers herein, nor their relationship to claims of cross libellant. [1159]

If the Court please, with respect to these vouchers, which I ask the clerk to now mark as Respondent's Exhibit A-24, we have not yet had an opportunity to remove several vouchers which by agreement have been eliminated. May it be stipulated that we will remove those at the first opportunity at the recess so as to reduce the vouchers to the total of \$1409.89 as indicated in the stipulation?

Mr. Hokanson: It may be so stipulated.

(Invoices marked Respondent's Exhibit A-24 for Identification.)

Mr. Howard: I would next like to have the clerk mark the Pacific Towboat & Salvage Company invoices.

(Towing invoices marked Respondent's Exhibit A-25 for Identification.)

The Court: Has A-24 been marked before this morning?

Mr. Howard: No, your Honor.

The Court: Have you offered A-24?

Mr. Howard: I was going to offer them all as a group when I complete the stipulation. The same stipulation, if the Court please, would apply to Identification A-25, being towing invoices for the services of the tug Pacific Retriever in towing the vessel from a point off the West Coast of Mexico to [1160] Los Angeles in the adjusted total of \$4118.

Counsel, as to that item may it be stipulated that Exhibit A-25 represents towage services purchased or furnished to the tanker Urania during November 1948, that the cost as to this item is reasonable, and said invoice has been paid by or on behalf of the claimant shipowner, and may be offered and admitted in evidence in this case? It is further stipulated, however, that nothing is conceded by cross respondent with respect to the necessity of the item represented by the invoices and vouchers herein, nor the relationship to claims of cross libellant.

Mr. Hokanson: It may be so stipulated.

Mr. Howard: At this time I will offer A-24 and A-25.

The Court: Do you wish to state your objection to each?

Mr. Hokanson: My objection is the general ob-

jection heretofore made, your Honor, that there has been no foundation laid for the relationship of these items to the work done by Commercial Ship Repair; and the continuing objection made earlier in the case with respect to the item of acceptance of the vessel by the cross libellant and the claim made thereafter.

The Court: Do you understand it? [1161]

Mr. Howard: I understand, if the Court please, but I believe that objection is contained in the body of the stipulation, that nothing is conceded with respect to the relationship of the——

The Court: But in order for the cross respondent to preserve his objection going to the merits, he should state it in the record, if it has not already been done.

Mr. Howard: I understand that subject to that continuing objection, counsel is agreeable to having these documents admitted in evidence?

Mr. Hokanson: That is correct.

The Court: The objection is overruled. Respondent's Exhibits A-25 and A-25 are admitted.

(Respondent's Exhibits A-24 and A-25 received in evidence.)

RESPONDENT'S EXHIBIT A-25

Invoice

Pacific Tow Boat & Salvage Company

Nov. 11, 1948

No. 914

To: M/S Urania and/or Owners,
c/o General Steamship Corp.
Berth 230 E,
Term. Island, Calif.

Services of Tug Pacific Retriever:

Towing M.S. Urania from 70 miles south of Cape San Lucas, Mexico, to Craig Shipbuilding Co., Long Beach, Calif.

Nov. 6th (8:30 AM) to Nov. 11th (1:00 PM) 1948—flat price \$4286.00

No transportation tax from Mexican Waters.

/s/ ANDREAS BEIS,
Master.

[Rubber stamp]

Comp. O.K. M.K.

Appr'd RHH

Check No. 84894

Amount \$4286.00

Charge to 120-60-1

Seen, noted and approved without prejudice, subject to adjustment.

BEST & COMPANY,
By /s/ FRANK G. NIVER,
Lloyd's Sub Agents,
Los Angeles, Calif.

[Stamped]: Paid Nov. 17, 1948.

/s/ F. A. GRUBER,
Pacific Towboat & Salvage Co.

Invoice
Pacific Tow Boat & Salvage Company
Mar. 11, 1948
No. 50

To: M/S Urania and/or Owners,
c/o General Steamship Corp.
Terminal Island, Calif.

Credit Memo

1680 gallons of Dark Diesel Fuel taken from
M/S Urania\$168.00

Invoice
Pacific Tow Boat & Salvage Company
Nov. 11, 1948
No. 914

To: M/S Urania and/or Owners,
c/o General Steamship Corp.
Berth 230 E,
Terminal Island, Calif.

Services of Tug Pacific Retriever:

Towing M/S Urania from 70 miles south of Cape San Lucas, Mexico, to Craigh Shipbuilding Yard, Long Beach, Calif.

Nov. 6th (8:30 AM) to Nov. 11th (1:00 PM)—flat price	\$4286.00
Credit: 1680 gallons of Dark Diesel Fuel taken from M.S. Urania—at 10c	168.00
	<hr/>
Total	\$4118.00
	<hr/>

Respondent's Exhibit A-25 admitted April 14, 1949.

Claimant's and Cross-Libelant's Exhibits Nos. U-1, U-3 and U-4 inclusive for identification March 24, 1949.

Mr. Howard: Next, if the Court please, as to Identification A-17, being a group of 13 pages of invoices of the Union Diesel Engine Company, counsel have agreed as to an adjustment in the amount of those invoices to eliminate certain items which by the testimony we concede are not in any way related to the claims of the cross libel in this case, which would reduce the total amount of those invoices to the sum of \$4275.78.

With that reduction, which we will also undertake to make on the invoices with leave of the Court to eliminate those items in some way by

notation on the [1162] invoices to reduce the figure to that amount, I now offer Identification A-17.

Mr. Hokanson: In addition to the subject of the continuing objection made with respect to the merits of these items, I will object to the introduction of the exhibit at this time on the ground that the same is not admissible for the reason that the testimony has not established that all of the items therein contained were necessary or proper for the repair of the vessel *Urania* arising out of the breakdown which has heretofore been described by the testimony.

There is, I submit, Your Honor, testimony by witnesses called in behalf of the cross libelant who have disputed the necessity of many of those items—all of which I have not taken the time to analyze, Your Honor—but in a great many cases, there is considerable doubt with respect to whether proper proof has been shown as to the need for those items, and since the invoices are offered as a group, I object to their admissibility on that ground.

The Court: The objection is overruled. Respondent's Exhibit A-17 is now admitted.

(Respondent's Exhibit A-17 received in evidence.)

(Deposition of Sidney W. Newell.)

RESPONDENT'S EXHIBIT A-17

The Union Diesel Engine Company

2200 East Seventh Street

Oakland 6, California, U. S. A.

Date of Contract, 10/28/48

Contract No., Wire & Phone from N. Y.

Sold to: Compania Naviera Limitada	Invoice No., 67389
c/o Simpson, Spence & Young	Invoice Date, 10/28/48
52 Broadway	Vendor's No., R-2777
New York, N. Y.	

Shipped to: M. V. Urania
Manzanillo, Mexico

Date Shipped, 10/28/48	From, Oakland, Calif.
	F.O.B., Oakland, Calif.

Via, N. A. Cross (Air Plane Passenger)

Quantity	Description	Unit Price	Amount
Repair Parts for Diesel engine #42538—Model V6—560 H.P. in Boat Urania			
1	V6-1490 Vertical shaft drive gear.....		\$120.00
1	V6-1403 Vertical shaft lower gear.....		97.50
1	V6-1452A Vertical shaft base bearing bushing		4.00
2	V6-1486 Ball Bearing.....	18.10	36.20
2	M-581 Tubing elbow .....	.35	.70
2	M-583 Tubing union half.....	.28	.56
1	M-586 Tubing tee .....		.44
1	M-588 Tubing union .....		.25
1	Pe. tubing copper, 1/4" x 12 feet		1.20
			<hr/> \$260.85

Net Weight, 82 lbs.

Declaramos que los datos y valores asignados a las mercancías mencionadas en esta factura, son los verdaderos y que procedemos con legalidad y buena fe.

We hereby certify that the above values and details are true and correct.

The Union Diesel Engine Company
By Geo. W. Emerson, Secretary.

(Stamped) : Paid Dec. 7, 1948, Union Diesel Engine Co.

(Deposition of Sidney W. Newell.)

Respondent's Exhibit A-17—(Continued)

The Union Diesel Engine Company
2200 East Seventh Street
Oakland 6, California, U. S. A.

Date of Contract, 10/28/48

Sold to: Compania Naviera Limitada	Invoice No., 67394
c/o Simpson, Spence & Young	Invoice date, 10/30/48
52 Broadway	Vendor's No., R-2776
New York, N. Y.	

Date Shipped, 10/28/48

From, Oakland, Calif.
F.O.B., Oakland, Calif.

Description

Amount

a/c Engine #42538, V-6,560/6—Urania

Paid a/c

Airplane ticket to Mexico City.....	\$136.91
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(Stamped) : Paid Dec. 7, 1948, Union Diesel Engine Co.

(Deposition of Sidney W. Newell.)

Respondent's Exhibit A-17—(Continued)

The Union Diesel Engine Company

2200 East Seventh Street

Oakland 6, California, U. S. A.

Sold to: Compania Naviera Limitada	Invoice No., 67459
c/o Simpson, Spence & Young	Invoice Date, 11/12/48
52 Broadway	Vendor's No., R-2776
New York, N. Y.	

a/c Engine #42538, V-6,560/6—Urania (YO-73)

2nd Progress Invoice

Description	Unit Price	Amount
Services, Engineer Cross from October 28 to November 11, both inclusive	15 Days @ \$30.00	\$450.00

October 28, 1948:

Local expenses, Engineer Cross:

Taxi	1.00	
Bridge Tolls .....	.50	
Tourist Card	1.49	
Baggage Chgs. Plane	20.90	23.89

Expenses in Mexico:

Oct. 29	Fare, Mexico City to Manzanillo, Mexico	\$66.61	
	Pullman	12.40	
	Meals	10.00	
	Taxi	25.00	
	Baggage Charges	6.00	
	Telephone	13.00	
	Customs Charges	435.67	
Oct. 30	Meals	15.50	
	Baggage	6.00	
Oct. 31	Meals	5.00	
	Lodging	20.00	
	Baggage	10.00	
	Water Taxi	16.00	Exchange
		641.18 @ \$5.85	109.61

(Deposition of Sidney W. Newell.)

Respondent's Exhibit A-17—(Continued)

The Union Diesel Engine Company
2200 East Seventh Street
Oakland 6, California, U. S. A.

Sold to: Compania Naviera Limitada	Invoice No., 67459
c/o Simpson, Spence & Young	Invoice Date, 11/12/48
52 Broadway	Vendor's No., R-2776
New York, N. Y.	

	Description	Unit Price	Amount
Phone calls by Mr. S. W. Newell at Los Angeles:			
Nov. 3	To M. V. Urania.....	\$23.50	
Nov. 4	To General Steamship Company.....	.45	
Nov. 6	To M. V. Urania.....	7.35	
Nov. 7	To M. V. Urania.....	5.00	\$ 36.30
Phone calls to Mr. S. W. Newell from Oakland:			
Oct. 27	To San Diego.....	2.28	
Oct. 28	To San Diego.....	2.28	
Nov. 8	To M. V. Urania.....	4.50	
Nov. 9	To General Steamship Company.....	2.30	11.36
			631.16
Insurance			13.13
			<u>\$644.29</u>

(Stamped) : Paid Dec. 7, 1948, Union Diesel Engine Co.
Note: Other expenses and services on later billings.

(Deposition of Sidney W. Newell.)

Respondent's Exhibit A-17—(Continued)

The Union Diesel Engine Company

2200 East Seventh Street

Oakland 6, California, U. S. A.

Sold to: Compania Naviera Limitada	Invoice No., 67463
e/o Simpson, Spence & Young	Invoice Date, 11/13/48
52 Broadway	Vendor's No., R-2776
New York, N. Y.	

Shipped to: M. V. Urania and Owners
e/o Craig Shipbuilding Co.,
Long Beach, California

Date Shipped, 11/13/48

From Oakland, Calif.

Via, Air Freight

F.O.B. Oakland, Calif.

	Description	Unit Price	Amount
	a/c Engine #42538, V-6,560/6—Urania		
1	V6-1005 Camshaft gear		\$172.50
1	V6-1405 Vertical shaft gear.....		85.00
2 Set	V6-1455 Lower vertical shaft bearings @ \$12.50		25.00
			<hr/> \$282.50

(Stamped) : Paid Dec. 7, 1948, Union Diesel Engine Co.

(Deposition of Sidney W. Newell.)

Respondent's Exhibit A-17—(Continued)

The Union Diesel Engine Company

2200 East Seventh Street

Oakland 6, California, U. S. A.

Sold to: Compania Naviera Limitada	Invoice No., 67477
c/o Simpson, Spence & Young	Invoice Date, 11/17/48
52 Broadway	Vendor's No., R-2825
New York, N. Y.	

Shipped to: MV. Urania and Owners, c/o General Steamship Corp., Ltd., 365 West 7th St., San Pedro (Notify consignee on arrival)

Date Shipped, 11/17/48	From Oakland, Calif.
Via, United Air Freight	F.O.B. Oakland, Calif.

Item	Quantity	Description	Unit Price	Amount
		a/c Engine #42538, V-6,560/6— M. V. Urania (YO-73)		
1	2	V6-4494R—Fuel control sub rod end@	\$ 1.00	\$ 2.00
2	12	V6-3574—Fulflo fuel oil filter ele- ments only	2.00	24.00
3	2	SV6-2675—L. O. Manifold Branch pipe	6.25	12.50
4	12	V6-663G—Copper Gaskets .....	.06	.72
---	12	V6-665—Rubber Gaskets .....	.25	3.00
7	2	Complete sets of crankcase gaskets, as follows:		
	4	V6-1605G—Gaskets .....	.10	.40
	2	V6-1605AG—Gaskets .....	.15	.30
	24	V6-1607G—Gaskets .....	.50	12.00
	2	V6-1609G—Gaskets .....	.40	.80
				<hr/> \$55.72

(Stamped) : Paid Dec. 7, 1948, Union Diesel Engine Co.

(Deposition of Sidney W. Newell.)

Respondent's Exhibit A-17—(Continued)

The Union Diesel Engine Company
2200 East Seventh Street
Oakland 6, California, U. S. A.

Date of Contract, 11/22/48

Sold to: Compania Naviera Limitada	Invoice No., 67483
c/o Simpson, Spence Young Co.	Invoice Date, 11/22/48
52 Broadway	Vendor's No., R-2840
New York, N. Y.	

Shipped to: do

Date Shipped: 11/22/48	From Oakland, Calif.
Via, Railway Express	F.O.B. Oakland, Calif.

Item	Quantity	Description	Unit Price	Amount
		AV6		
1	6	3221 H.P. fuel lines from manifold to valves	@ \$9.00	\$54.00

(Stamped) : Paid Dec. 7, 1948, Union Diesel Engine Co.

(Deposition of Sidney W. Newell.)

Respondent's Exhibit A-17—(Continued)

The Union Diesel Engine Company
2200 East Seventh Street
Oakland 6, California, U.S.A.

Date of Contract, 11/8/48

Sold to: Compania Naviera Limitada
c/o Simpson, Spence Young Co.
52 Broadway
New York, N. Y.

Invoice No., 67488
Invoice Date, 11/24/48
Vendor's No., R-2805

Shipped To: M. V. Urania
Long Beach

From Oakland, Calif.

Via, By Service Engineer F.O.B. Oakland, Calif.
a/c Engine #42538, V-6,560/6—Urania

Item	Quantity	Description	Unit Price	Amount
1	2	AV6-3330—F.P. suet. valve assy.....@	\$12.50	\$ 25.00
2	2	AV6-3320—F.P. Disch. valve assy.....	12.50	25.00
3	45	V6-A1209—Fuel valve packing.....	.05	2.25
4	1	V66-1950A—F.W. Gauge		13.90
5	1	V6-1950—F.W. Gauge		13.90
6	9	V6-1216—Fuel valve seat gasket.....	.09	.81
7	1	Bottle lapping compound.....		.75
8	12	V6-1213—Fuel valve nozzle nut gasket	.05	.60
9	6	V6-3314A—Fuel valve plunger sheer washers .....	.29	1.74
10	18	V6-3302G—Copper gasket .....	.06	1.08
11	12	V6-3358—Copper gasket .....	.17	2.04
12	11	V6-3327-1—Copper gasket .....	.10	1.10
13	18	V6-3307G—Copper gasket .....	.12	2.16
14	6	V6-3316A—Copper gasket .....	.10	.60
15	6	V6-3316—Copper gasket .....	.08	.48
16	6	3358-V6—Copper gasket .....	.10	.60
17	1	3801B—F.P. cyl. locknut wrench.....		.60
18	1	3801A—F.P. valve cage locknut wrench		.50
19	1	8934—F.P. plunger nut wrench.....		1.15
20	1	15682—F.P. fitting wrench		3.10
21	1	809—F.P. priming pump cyl. wrench....		2.08
22	2	V6-1154A—Splash guard between valve lever brek.	1.00	2.00
23	12	M1369—10/32 RH screws 3/8 long.....	.001½	.06
24	12	M391—10-24 x 3/8 RH screw.....	.001½	.06
25	12	M396—12-24 x 3/8 RH screw.....	.002½	.08
26	6	,907—1/4" tee BI.....	.21	1.26

(Deposition of Sidney W. Newell.)

Respondent's Exhibit A-17—(Continued)

Item	Quantity	Description	Unit Price	Amount
27	6	M604— $\frac{1}{4}$ x $1\frac{1}{2}$ nipple BL.....	.06	.36
28	3	V6-6633—A.S. Tubing connecting screw	1.25	3.75
29	6	V6-6633—Washer .....	.02	.12
30	6	K6-6634— $\frac{5}{16}$ tubing connector.....	1.00	6.00
31	12	M570— $\frac{3}{8}$ HP Union nut 41F.....	.20	3.48
32	6	M571— $\frac{3}{8}$ x $\frac{1}{4}$ P.T. half union 48F..@	.35	2.10
33	6	M569— $\frac{3}{8}$ x $\frac{1}{4}$ P.T. Elbow 49F.....	.44	2.64
34	6	M1125— $\frac{1}{4}$ x $\frac{1}{4}$ P.T. comp. elbow 69F..	.31	1.86
35	6	M581— $\frac{1}{4}$ x $\frac{1}{8}$ P.T. comp. elbow 69F....	.26	1.56
36	6	M583— $\frac{1}{4}$ x $\frac{1}{8}$ P.T. comp. connector 68F .....	.17	1.02
37	1 Set	Straight shank drills.....		24.75
38	4 $\frac{1}{2}$ lbs.	$\frac{1}{4}$ OD copper tubing.....	.75	3.38
39	9 $\frac{1}{4}$ lbs.	$\frac{5}{16}$ OD copper tubing.....	.70	6.48
40	13 lbs.	$\frac{3}{8}$ OD copper tubing.....	.65	8.45
41	2	V6-3872—Piston stops	7.50	15.00
42	1	13/32 straight shank drill .....		.97
43	1	10-24 tap, #1 starting.....		1.00
44	1	#24 straight shank drill.....		.50
45	1	New type governor crosshead assy. for V6 engine.....	}	125.00
46	1	New type governor weight assy. for V6 engine.....		
47	1	V6-1310A—Governor casing oil deflector		5.00
48	1	Taper pin #8, 4" long, drilled.....		.50
49	1	M562—Steel cotter pin		No charge
50	1	V6-1490—Vertical shaft drive gear.....		120.00
51	1	V6-1403—Vertical shaft lower gear.....		97.50
52	1	$\frac{3}{16}$ - $\frac{3}{4}$ " copper tube flaring tool.....		7.50
53	1	V6-3868—Fuel valve tip cleaning .014"		.10
54	12	M579— $\frac{5}{16}$ " x 3" steel cotter pins.....		.15
55	12	V6-663G— $\frac{1}{16}$ x $\frac{7}{16}$ x $\frac{21}{32}$ oil terminal gaskets (cop.) .....	.06	.72
56	2	V6-1455—Lower vert. thrust shaft brg.	12.50	25.00
				567.79
2 $\frac{1}{2}$ % sales tax.....				14.19
				<hr/> \$581.98

(Stamped) : Paid Dec. 7, 1948. Union Diesel Engine Co.

(Deposition of Sidney W. Newell.)

Respondent's Exhibit A-17—(Continued)

The Union Diesel Engine Company
2200 East Seventh Street
Oakland 6, California, U. S. A.

Date of Contract, 11/13/48

Contract No., Ltr.

Sold to: Compania Naviera Limitada
c/o Simpson, Spence & Young
52 Broadway
New York, N. Y.

Invoice No., 67488
Invoice Date, 11/26/48
Vendor's No., R-2825

Shipped To: M. V. Urania & Owners
c/o Steamship Corp., Ltd.,
365 West 7th St.,
San Pedro, California

Date Shipped: 11/17/48

From Oakland, Calif.

Via, United Air Freight

F.O.B. Oakland, Calif.

Item	Quantity	Description	Unit Price	Amount
		a/c Engine #42538, V-6, 560/6—M. V. Urania		
5	1	V6-1005 Helical Gear.....	\$172.50	
	1	V6-1405 Helical Gear	85.00	
	1	V6-1490 Helical Gear	120.00	
			<hr/>	377.50
		Adjustment:		
		R-2805—Invoice #67488:		
	2	V6-1455 Lower Vert. Thrust Shaft		
		Bearing (not received at Long		
		Beach)	25.00	\$352.50
		Sales Tax on Material 2½%.....		8.81
				<hr/>
				\$361.31

(Stamped): Paid Dec. 7, 1948, Union Diesel Engine Co.

(Deposition of Sidney W. Newell.)

Respondent's Exhibit A-17—(Continued)

The Union Diesel Engine Company
2200 East Seventh Street
Oakland 6, California, U. S. A.

Date of Contract, 10/28/48

Sold to: Compania Naviera Limitada	Invoice No. 67509
c/o Simpson, Spence & Young	Invoice Date, 11/26/48
52 Broadway	Vendor's No., R-2776
New York, N. Y.	

Shipped To: M. V. Urania
Long Beach, California

Via, Service Engineer
3rd Progress Invoice

Description	Unit Price	Amount
Services—Engineer Cross:		
November 12th to November 25, 1948, both inclusive—14 days	@ \$30.00	\$420.00
Services—Engineer Firth:		
November 10th to November 19, 1948, both inclusive—110 hours	3.75	412.50
Services—Engineer M. L. Newell:		
November 11th to November 16, 1948, both inclusive—61½ hrs.	3.75	230.63
Services—Engineer S. W. Newell:		
Three days	30.00	90.00
		<hr/> 1,153.13
Compensation insurance on labor.....		36.62
Expenses as attached		441.83
Prepaid Air Freight Charges to Los Angeles 11/12/48		6.80
Prepaid Air Freight Charges to Los Angeles 11/13/48		1.55
Telephone Calls 11/11.....	\$5.63	
11/15.....	3.06	
11/15.....	3.56	
11/16.....	4.06	16.31
		<hr/> \$1,656.24

(Stamped) : Paid Dec. 7, 1948, Union Diesel Engine Co.

(Deposition of Sidney W. Newell.)

Respondent's Exhibit A-17—(Continued)

The Union Diesel Engine Company
2200 East Seventh Street
Oakland 6, California, U. S. A.

Date of Contract, 10/28/48

Sold To: Compania Naviera Limitada
c/o Simpson, Spence & Young
52 Broadway
New York, N. Y.

Invoice No., 67509
Invoice Date, 11/26/48
Vendor's No., R-2776

Expenses of Service Engineers:

Description	Unit Price	Amount
Service Engineer Cross:		
November 1 to November 10.....	None	
November 11—Hotel	32.00	
November 13—Meals	4.80	
November 14—Meals	3.00	
November 15—Hotel	16.00	
November 16—Meal	\$1.25	
Mex. tourist card..	1.50	2.75

Paid United Service

Repairs—2 Fresh Water Coolers } 1 Oil Cooler }	140.65	U. S. \$ \$199.20
November 23—Air Transportation		
Manzanillo to Guadalajara.....M. \$	61.00	
Meals	18.25	
November 24—Air Transportation		
Guadalajara to Los Angeles.....	491.15	
Meals	11.50	
Taxi	10.00	
November 25—Meals	2.00	
	594.01 @ 6.78	87.61
Air Transportation to Oakland.....		42.10
Taxi		2.50

331.41

Adjusting previous billing Engineer Cross:

Expenses to October 31, 1948:

Mexican Exchange shown as \$5.85

or M. \$641.18\$109.61

Should have been @ 6.78 or

M. \$641.18 94.58

15.03

316.38

(Deposition of Sidney W. Newell.)

Respondent's Exhibit A-17—(Continued)

The Union Diesel Engine Company
2200 East Seventh Street
Oakland 6, California, U. S. A.

Date of Contract, 10/28/48

Sold to: Compania Naviera Limitada	Invoice No., 67509
c/o Simpson, Spence & Young	Invoice Date, 11/26/48
52 Broadway	Vendor's No., R-2776
New York, N. Y.	

Description	Unit Price	Amount
Service Engineer Firth:		
Auto mileage Oakland to Long Beach and return, including local use of auto at Long Beach and Los Angeles—1,025 miles....@ \$0.4	\$41.00	
November 10—Meals and hotel en route.....	6.15	
November 19—Meals and hotel en route.....	3.70	\$50.85
<hr/>		
Service Engineer M. L. Newell:		
Phones and miscellaneous expenses.....		4.85
Services S. W. Newell:		
Auto mileage 150 miles@ \$0.4	6.00	
Hotel and meals	8.50	
Phone	5.25	
Personal tools furnished (not returned) as agreed	50.00	69.75
	<hr/>	<hr/>
		\$441.83

(Stamped) : Paid Dec. 7, 1948, Union Diesel Engine Co.

(Admitted April 14, 1949)

Mr. Howard: Next, if the Court please, as to Identifications A-21, A-22 and A-23, being survey reports of Mr. Pike, Mr. Dupuy and Mr. Summers, identified in depositions yesterday, we have agreed with counsel for the cross respondent that it may be the law of the case that these survey reports so identified may be admitted for the purpose of showing the Court the truth of the matters within the personal knowledge or observation of the surveyors as shown in their reports and in their testimony.

The Court: Excluding therefrom statements by him based obviously upon hearsay?

Mr. Howard: That is correct, Your Honor.

Mr. Hokanson: For the record, Your Honor, may the record show that this stipulation is made subject to my continuing objection, and that other than that we agree the survey reports are admissible to the extent Mr. Howard has announced.

The Court: The objection to each of these exhibits stated by counsel for the libelant and cross respondent is overruled in each instance. Respondent's Exhibit A-21 is admitted. Respondent's Exhibit A-22 is admitted. Respondent's Exhibit A-23 is admitted.

(Respondent's Exhibits A-21, A-22 and A-23 received in evidence.)

RESPONDENT'S EXHIBIT A-21

American Bureau of Shipping
45 Broad Street, New York 4, N. Y.

(This form is to be used in confirmation of
class only.)

Report No. 3261

Los Angeles Harbor November 17, 1948
M. V. "Urania"

This Is To Certify that the undersigned surveyor to this Bureau did at the request of General Steamship Company, agents, attend the steel screw motor tank vessel "Urania" of Panama, R.P., Gross Tons 690, while she lay afloat at the Craig Shipyards, Long Beach, California on November 11, 1948, and subsequent dates, in order to report on condition of the vessel for damage in way of main engine, and for permanent repairs carried out at this time. For further particulars see vessel's log books and report as follows:

The vessel arrived at this port under tow of tow boat "Pacific Retriever" on November 11, 1948.

Upon Examination Found

Main Engine

1. A total of four (4) upper and lower helical timing gears destroyed.

Recommended: Remove and replace necessary parts to renew four (4) destroyed helical timing gears.

2. Water jacket gasket in way of lube oil terminal on the port side of the No. 2 cylinder leaking.

Recommended: Renew gasket.

3. A total of 13 leaks in way of joints of two (2) fresh water coolers and one (1) lube oil cooler.

Recommended: Coolers to be cleaned, repaired, tested and proved tight.

4. Signs of contaminated lube oil, and salt water in sumps of engine base.

Recommended: Clean and flush lube oil system and install new lube oil.

5. The No. 6 crank bearing was opened, cleaned, examined and found satisfactory and closed up in good order.

Recommended: Satisfactory.

6. The No. 7 main bearing was opened, cleaned, examined and found satisfactory and closed up in good order.

Recommended: Satisfactory.

7. The main, thrust bearing was opened, cleaned, examined and found satisfactory and closed up in good order.

Recommended: Satisfactory. Flush and install new lube oil.

8. Overhead camshaft journals and bearings were cleaned, examined and found satisfactory.

Recommended: Satisfactory.

9. Vertical shaft in way of damaged timing gears.

Recommended: Check for truth. Close up main engine ready for service.

Upon completion of the above recommended repairs a dock trial and a sea trial was held and proved satisfactory. It is recommended that the vessel be retained in her present classification with this Bureau.

/s/EDWIN W. PIKE,
Surveyor.

Respondent's Exhibit A-21 admitted April 14, 1949.

Claimant's and Cross-Libelant's Exhibits X-1 and X-2 inclusive, for identification March 25, 1949.

RESPONDENT'S EXHIBIT A-22

Lloyd's

Survey No. L 265-48

Certificate of Appointment of Surveyor by Lloyd's
Agent for the Purpose of
Survey on Ship

A request for the appointment of a Surveyor having been received by us from General Steamship Corporation the Ship Agents of the M. V. "Urania"

We, Best and Company, Lloyd's Sub-Agents, at Los Angeles, California, certify that Frank S. Dupuy and Son, Marine Surveyors has been instructed by us to survey that vessel, and we believe

Respondent's Exhibit A-22—(Continued)
confidence may be placed in this certificate, which is attached.

Issued without prejudice and subject to the terms, conditions and amount of the Policy of Insurance.

The following fees have been paid to us by the Ship Agents:

Surveyor's Fee	\$105.00
To charges of Captain Walter Gay, Lloyd's Agent, San Francisco...	23.25
Agency Fee	20.00
To miscellaneous expense	6.56
	<hr/>
	\$154.81

BEST and COMPANY,

By /s/ FRANK G. NIVER,
Lloyd's Sub-Agents.

Los Angeles, California

Dated: December 10, 1948.

Frank S. Dupuy & Son
Consulting Engineers
Marine Surveyors
Wilmington, California

Report of Survey

No. 1086

November 23, 1948

M. V. "Urania"

At the request of the Owners, and of Best & Company, Lloyd's Sub Agents, Los Angeles, California,

Respondent's Exhibit A-22—(Continued)

we the undersigned Surveyors, did on November 11, 1948 and subsequently, attend on board the M. V. "Urania" 690 tons gross register of Panama, as she lay afloat at the Craig Ship Building Company, Long Beach, California.

Survey was made for the purpose of ascertaining the nature and extent of main engine damage stated sustained on voyage from Seattle, Washington, to Panama on or about October 26, 1948 requiring the vessel to put in at Manzanillo, West Coast of Mexico for repairs and subsequently to turn back to Los Angeles Harbor under flat tow.

For further particulars see vessel's Log Books.

Log Books written in Greek.

Please find attached, Owners translation of Deck and Engine Log Books.

The undersigned upon examination:-

Found: Timing gears to be seriously worn on tooth contact faces, four (4) gears effected, two top and two bottom gears on the virtical shaft that drives the cam-shaft.

Recommended: Timing gear assembly to be checked for true alignment. Vertical shaft to be placed in lathe and checked for truth. Crank shaft deflection readings to be taken and thrust bearings examined.

Found: Evidence of salt water in lube oil system.

Recommended: Lube oil cooler to be tested.

Found: Lube oil cooler found leaking between

Respondent's Exhibit A-22—(Continued)

salt water cooling and lube oil side, allowing salt water to contaminate the lube oil.

Recommended: Lube oil cooler to be soldered where leaking and proven tight under one-hundred pound (100#) hydrostatic test.

Found: Lube Oil System.

Recommended: Lube oil system to be thoroughly cleaned and flushed to remove all steel particles and salt water.

Found: Damaged timing gears.

Recommended: Four new timing gears to be installed and gear tooth faces to be blued to insure correct alignment.

Found: Trials.

Recommended: On completion of repairs a dock trial of six hours and subsequently a sea trial of four hours at full power are to be held.

Found: Examination of new gears.

Recommended: At the conclusion of the trials, the new gears are to be examined and checked for true alignment.

Remarks:

Repairs were carried out as recommended to the satisfaction of Owners' Representative, Classification and Underwriters Surveyors.

At the conclusion of trials the timing gears were examined and found in good order. Four new timing gears were placed on board as spares.

All labor and material for the repairs as recom-

Respondent's Exhibit A-22—(Continued)
 mended was furnished by the Union Diesel Service Department of Oakland, California. Mr. Cross of Union Diesel was flown from Oakland, to Manzanillo, Mexico to supervise the installation of the two new timing gears which failed after thirty-six hours of service—(see Log). Mr. Cross returned to Los Angeles Harbor on the vessel.

Summary

Estimated cost of repairs.

Union Diesel Co.

New timing gears (six total) Plus freight—approximately	\$1000.00
---	-----------

Labor, expenses, etc., for three service men—approximately	1700.00
--	---------

Pacific Towboat & Salvage Co.

Two days in way to vessel and five days towing	4300.00
--	---------

\$7000.00

In addition to the above estimated costs, the Owners will be submitting accounts covering Port charges etc.

Repairs Commenced — November 11, 1948

Repairs Completed — November 17, 1948

Attending at this Survey:-

Mr. H. J. Summers, Representing the Owners.

Mr. E. W. Pike, Representing American Bureau of Shipping.

Mr. G. M. Dupuy, Representing Lloyd's Sub Agents.

Respondent's Exhibit A-22—(Continued)

Because of the leaking lube oil cooler and the salt water found in the lube oil system it appears that the failure of the timing gears was caused by this condition.

FRANK S. DUPUY & SON,

/s/ GEORGE M. DUPUY,
Surveyor.

M/T "Urania"

Deck Log Extracts from October 26, 1948 to November 11, 1948 while vessel on way from Seattle, Washington, to Panama Canal—southbound on orders.

Oct. 26:

- 1520 Stopped the engine to clean the filters. Chief Engineer discovered that gear of the vertical shaft thrust bearing and the gear of the vertical shaft drive are galled. Ship's engineers trying to do something. Latitude $18^{\circ} 15'$ north longitude = $104 - 24$ West.
- 1930 We called up the Owners at New York by ship's radio telephone, and they ordered us, soon as Chief Engineer fix temporary the above gears, to proceed Los Angeles, Calif.
- 2330 Engine started to run 145 RPM. Changed course to 297° true proceeding to Los Angeles.

Respondent's Exhibit A-22—(Continued)

Oct. 27:

- 0400 Partly cloudy and light WNW/ly breeze and moderate swell long length. Engine runs on half speed RPM 150.
- 0800 Partly cloudy and light WNW/ly breeze and moderate swell long length. Engine runs on half speed RPM 150.
- 1145 Chief Engineer reported at bridge, that he can't give guarantee for the engine to continuing our destination to Los Angeles. So it was necessary to proceed the nearest port, which is Manzanillo, West Coast of Mexico. Light WNW/ly breeze and moderate swell short length. Vis. good. From Noon position to Manzanillo 63 miles to go. Engine runs 145 RPM.
- 1600 Clear and gentle NW/ly breeze and moderate swell and vis. good.
- 2000 Clear and gently W/ly breeze and moderate swell and vis. good.
- 2300 Outside of Manzanillo entrance, waiting for early morning to get the Pilot Station.
- 2400 Clear and gentle WNW/ly breeze and moderate swell and vis. good.

Oct. 28:

- 0730 Arrived at Manzanillo Pilot Station. Standby engine.

Respondent's Exhibit A-22—(Continued)

- 0748 Stopped engine.
- 0750 Pilot, Mr. G. Borda Davalos, aboard. Proceeding to the anchorage of Manzanillo Harbor, under pilot instructions.
- 0815 Arrived at anchorage. Stopped the engines.
- 0820 Dropped starboard anchor 21½ shackles in the water.
- 0825 FWE. Custom house and doctor and Immigration aboard.
- 0830 We took free pratique.
- 0835 Doctor and Immigration and Custom house and Pilot, left the ship.
- 1200 Sea watches broken.
- 1600 Clear and gentle NW/ly breeze. Vessel swinging at starboard anchor chain.
- 1800 Day ends—clear.
- Oct. 29:
- 0600 Day comes fine and clear.
- 0800 At Manzanillo anchorage on account of engine trouble.
- 0800 Clear and calm.
- 0800 Fokion Kritikos, able seaman, absent from his duty without any permission.
- 1100 Ship's engineers refused to dismantle the necessary parts. We hired two machinists from shore and done the job.

Respondent's Exhibit A-22—(Continued)

1200 Clear and light NW/ly air.

1600 Clear and light NW/ly breeze.

Day ends—clear.

At anchorage on account of engine trouble.

Vessel swinging at starboard anchor chain.

Oct. 30:

0600 Day comes fine and clear.

0800 Clear and calm.

At anchorage of Manzanillo Harbor on account of engine trouble.

1200 Partly cloudy and light ENE/ly breeze.

1600 Partly cloudy and calm.

1800 Partly cloudy and calm.

1930 Union Diesel service man arrived from Oakland, Calif. Made engines inspection. (Mr. Cross.)

0600 Day comes partly cloudy and light SSW/ly air.

0800 Clear and light S/ly air.

Union Diesel service man started to work on engine.

1200 Clear and light S/ly breeze.

1700 Mostly clear and calm.

1700 Union Diesel service man K.O. for day.

1800 Day ends—mostly clear.

Respondent's Exhibit A-22—(Continued)

Nov. 1:

0600 Day comes mostly clear.

0800 Mostly clear and light NNE/ly air.

At Manzanillo anchorage on account of engine trouble.

1200 Mostly clear and light S/ly air.

1700 Mostly clear and light NNW/ly breeze.

1800 Day ends—mostly clear.

Nov. 2:

0600 Day comes partly cloudy and calm.

0800 Partly cloudy and calm.

1200 Partly cloudy and light S/ly air.

1600-1630 Engine trial at anchorage.

1700 Partly cloudy and light SSE/ly air.

1800 Day ends—mostly clear.

Nov. 3:

0600 Day comes partly cloudy and calm.

0800 Partly cloudy and calm.

1045 Immigration inspector aboard to check the crew.

1110 Pilot, Mr. G. Borda Davalos, aboard for engine trial.

1120 Engine on standby. 1121—Started to heave anchor up.

Respondent's Exhibit A-22—(Continued)

- 1130 Anchor aweighed, clow ahead. 1135—Engine stopped.
- 1140 Engine started slow ahead. 1143—engine stopped.
- 1155 Engine started on slow ahead. 1205—Full speed ahead.
- 1230 Engine on slow ahead.
- 1245 Union Diesel service man reported at bridge that it is necessary to return back to the anchorage to check the valve timing.
- 1255 Arrived at anchorage. Stopped the engines.
- 1300 Dropped starboard anchor 2 shackles in the water. 1305—FWE.
- 1310 Pilot and Immigration inspector left the ship.
- 1555 Pilot, Mr. G. Borda Davalos, aboard for engine trial.
- 1600 Engine on standby. Started to heave anchor up.
- 1605 Anchor aweighed. Slow ahead. 1615—Finished with engine trial. Awaiting for Immigration Inspector. 1635—Immigration Inspector aboard. 1638—Pilot and Immigration inspector left the ship.
 Slow ahead. 1650 — Full ahead proceeding our destination to Los Angeles. Light W/ly breeze and moderate swell.

Respondent's Exhibit A-22—(Continued)

2400 Clear and gentle NW/ly breeze and moderate swell. Vis. good.

Nov. 4:

0400 Partly cloudy and gentle NW/ly breeze and moderate swell. Vis. good.

0800 Partial clouds and gentle NW/ly breeze and moderate sea and visibility good.

0900 Stopped the engine to inspect the new gears.

1002 Full ahead. Gears inspected everything O.K.

1200 Partly cloudy and light WNW/ly breeze and moderate sea and vis. good.

1600 Broken cloudy and gentle NW/ly breeze and slight sea and vis. good.

1820 Due to heavy swell it was necessary to pump more ballast in the No. 3 tank.

2000 Mostly clear and gentle NW/ly breeze and slight sea and vis. good.

2400 Partly cloudy and moderate WNW/ly wind and moderate sea and vis. good. Ship pitching heavy.

Nov. 5:

0400 Partly cloudy and moderate NNW/ly breeze and moderate sea and vis. good. Ship pitching heavy.

Respondent's Exhibit A-22—(Continued)

0405 Engine $\frac{1}{3}$ speed ahead, on account of lower vertical shaft—gears going bad. 0630—Contacted Coast Guard, they are sending tug.

Nov. 5:

0635 Stopped the engine. Oil contaminated with steel from gears.

0800 Clear and gentle to moderate WNW/ly breeze and moderate sea.

1145 Engine started to run $\frac{1}{3}$ ahead RPM 160.

1200 Mostly clear and light N/ly breeze and slight sea and vis. good.

1321 Engine shut down.

1600 Clear and gentle NNW/ly breeze and slight sea and vis. good.

1655 Engine started on slow ahead. 1845—engine stopped.

2005 Engine on slow ahead. Clear and light NNE/ly breeze and slight sea.

2105 Engine shut down. 2300—engine runs on slow ahead.

2400 Engine shut down.

2400 Clear and light NNW/ly breeze and slight sea and vis. good.

Nov. 6:

0300 Engine on slow ahead.

Respondent's Exhibit A-22—(Continued)

- 0400 Clear and light NNE/ly breeze and slight sea and viz. good.
- 0407 Engine shut down.
- 0700 Engine running slow ahead.
- 0800 Partly cloudy and light NNE/ly breeze and moderate swell and viz. good.
- 0830 Tug Pacific Retriever alongside, while our engine was running. They ordered us to stop the engine. They gave us towing line and fastened a bridle. Our crew fastened the bridle. They started towing at 8:52 a.m. Clear and light NNE/ly breeze and moderate sea and viz. good.
- 1200 Partly cloudy and light NNW/ly breeze and low swell and viz. good. Continued towing.
- 1600 Clear and light W/ly air and low swell and viz. good. Towing continued.
- 1635 Abeam Cape Falso. Altered course to 312° true.
- 2000 Clear and moon light and W/ly light breeze. Low swell and vis. very good. Towing continued.
- 2400 Clear and light W/ly breeze and low swell and viz. good. Towing continued.
- Nov. 7:
- 0400 Clear and light NNW/ly breeze and low swell and vis. good. Towing continued.

Respondent's Exhibit A-22—(Continued)

- 1800 Clear and light NW/ly air and low swell short and vis. good. Towing continued.
- 1200 Clear and light NW/ly air and low swell short and vis. good. Towing continued.
- 1410 Abeam Cape San Lazaro.
- 1600 Light overcast and light NW/ly air and low swell and vis. good. Towing continued.
- 2000 Partly cloudy and light NY/ly air and low swell and vis. good. Towing continued.
- 2400 Similar weather. Towing continued.

Nov. 8:

- 0400 Cloudy and light N/ly air and low swell and visibility very good. Towing continued.
- 0800 Similar weather.
- 1200 Partial clear and light N/ly air and smooth sea and vis. good. Towing continued.
- 1600 Cloudy and moderate N/ly wind and moderate sea and vis. good.
- 2000 Clear and moderate N/ly wind and moderate sea and vis. good.
- 2035 Abeam Natividad I.
- 2400 Clear and moon light and moderate NNE/ly wind and heavy swell. Ship rolling heavily and vis. good. Towing contd.

Respondent's Exhibit A-22—(Continued)

Nov. 9:

- 0200 Abeam San Benito I.
- 0400 Clear and moderate NE/ly wind and heavy swell. Ship rolling heavily and vis. good. Towing continued.
- 0800 Clear and strong NE/ly wind and rough sea and visibility very good. Ship is suffering in rolling and pitching heavily.
- 1200 Clear and moderately NE/ly wind and moderate sea and vis. good. Towing continued.
- 1600 Clear and N/ly gentle breeze and moderate sea and vis. good.
- 1607 We dropped anchor at Punta San Carlos anchorage to trans. for fuel oil (Diesel oil) to tug Pacific Retreiver.
- 1603 Commenced pumping on fuel oil (Diesel oil).
- 1900 Finished with pumping on fuel oil. Tug received 1680 gallons Diesel oil, from the Motor Tanker "Urania."
- 1921 Started to heave anchor up.
- 1930 Anchor aweighed. 1940—they started tow.
- 2000 Clear and moon light and NNW/ly light breeze and vis. good.
- 2400 Clear and moon light and NNW/ly light breeze and smooth sea and vis. very good. Towing continued.

Respondent's Exhibit A-22—(Continued)

Nov. 10:

- 0400 Clear and light NNW/ly air and smooth sea and vis. good. Towing continued.
- 0800 Clear and light NNW/ly air and smooth sea and vis. very good. Towing contineud.
- 1200 Clear and light NW/ly breeze and smooth sea and vis. good. Towing continued.
- 1600 Similar weather. Towing continued.
- 1645 Abeam Todos Santos Is. $5\frac{3}{4}$ miles off.
- 2000 Cloudy but bright and light NW/ly breeze and hazy horizon and low swell and vis. moderate. Towing continued.
- 2400 Clear and moon light and NW/ly light air and moderate swell and vis. good. Towing continued.

Nov. 11:

- 0400 Clear and light W/ly air and smooth sea and visibility very good. Towing continued.
- 0800 Cloudy but bright and hazy horizon and low swell and light NW/ly breeze and vis. moderate. Towing continued.
- 0825 Started to pump the ballast out.
- 0930 Engine on standby.
- 1020 Dropped anchor at San Pedro anchorage. Quarantine Station.

Respondent's Exhibit A-22—(Continued)

- 0945 Doctor aboard.
- 1000 We took free partique.
- 1005 Immigration Inspector and Customhouse aboard.
- 1150 Immigration Inspector and doctor and Customhouse left the ship.
- 1217 Started to heave anchor up.
- 1230 Anchor aweighed. Proceeding to the dock on the assistance of the tug Pacific Retreiver.
- 1330 Docked ship at Craig Shipbuilding Co. pier.
- 1340 Tug Pacific Retreiver left the ship.
- 1345 All fast fore and after alongside to the pier.
- Day ends—fine and clear.

ANDREAS BEIS,

Master.

M/T "Urania"

Engine Log Extracts from October 26, 1948 to November 11, 1948 while vessel on way from Seattle, Washington, to Panama Canal—southbound on orders.

Oct. 26:

- 1520 Revolutions of engine reducing from normal 290 RPM to 240 and in continuation increased to 320. Reduced again periodically. A knock was heard at after end of engine.

Respondent's Exhibit A-22—(Continued)

Stopped engines for inspection, and discovered that the lower timing gears were galled and could not keep engine running. Cleaned gears and reassembled.

Oct. 27:

2330 Engine ahead. Could not run at more than 150 RPM. Engine running at 150 RPM. Excessive smoking of engine and uneven motion. Knocking.

Oct. 28:

0820 Stop engines.

Oct. 29:

1000 Engine dismantled with help of machinists.

Oct. 30:

1930 Union Diesel Service man arrived on board and made inspection of engine.

Oct. 31:

0800 Union Diesel Service man, Mr. Cross, with assistance of ship's force removed vertical drive shaft of timing gears. Shaft was taken out to machine shop on shore and checked for bend. Rectified slight bend on lower part of vertical shaft.

Placed additional lubrication lines to timing gears and governor.

Nov. 1:

Engine was timed by Union Diesel Service man with assistance of ship's force.

Respondent's Exhibit A-22—(Continued)

Nov. 2:

Timing of engine continues.

Nov. 3:

1100 Timing of engine completed. Engine ready for sea trial.

1150 Engine full ahead. Operation of engine uneven and irregular. Pistons hitting valves.

1330 Stop engine for inspection of timing.

1600 Timing readjusted.

1635 Various maneuvers.

1640 Engine full ahead at 300 RPM.

Nov. 4:

1900 Stop engine for inspection of timing gears by Union Diesel Service man. Found in good order.

1000 Full ahead at 325 RPM.

2100 Vessel pitching heavily and propeller emerging from water. Engine racing up to 330 RPM.

Nov. 5:

0350 Vessel pitching and engine racing. Engine started running irregularly. Stopped engine, and made inspection. Discovered lower timing gears galled again. After conference with Union Diesel Service man and further test of running condition, informed Captain that vessel cannot proceed safely with own power. Further discovered lubricating oil contaminated with steel particles.

Respondent's Exhibit A-22—(Continued)

Cleaned system and changed lub oil.

1150 Engine slow ahead 150 RPM.

1300 Stop engine.

1500 Engine slow ahead 140 RPM.

1600 Stop engine.

1900 Engine slow ahead 140 RPM.

2000 Stop engine.

2300 Engine slow ahead 140 RPM.

2400 Stop engine.

Nov. 6:

0300 Engine ahead slow 140 RPM.

0400 Stop engine.

0700 Engine slow ahead 140 RPM.

0800 Various maneuvers.

0835 Stop engine.

Nov. 7:

Engine stopped.

Nov. 8:

Engine stopped.

Nov. 9:

Engine stopped.

Nov. 10:

Engine stopped.

Nov. 11L

1000 Engine ahead for various maneuvers.

1025 Stopped engine.

Respondent's Exhibit A-22—(Continued)

1330 Finished with engine.

P. BAXEVANIS,
Chief Engineer.

Respondent's Exhibit A-22 admitted April 14,
1949.

Claimant's and Cross-Libelant's Exhibits Z-1
to Z-8 inclusive, for identification March 26, 1949.

RESPONDENT'S EXHIBIT No. A-23

Harry J. Summers
Marine Surveyor
San Pedro, California

November 19, 1948

M. T. "Urania"

1. This is to certify that the undersigned, H. J. Summers Marine Surveyor, did at the request of the General Steamship Corporation, Agents, attend the Motor Tank vessel "Urania", of Panama, R. P., 690 gross tons, owned by Compania Naviera Limitada of New York, while she lay afloat at the yards of the Craig Shipbuilding Company, Long Beach, California on November 11, 1948 and subsequent dates in order to examine and report on condition of the main engine stated to have developed operating trouble which was first noticed on October 26, 1948 while on voyage from Seattle, Washington to Panama Canal. For particulars see Engine Room and

Deck Logs, October 26th to November 11th and report as follows:—

2. Others attending were Mr. D. Antippas representing the Owners, Mr. E. W. Pike representing the American Bureau of Shipping, Mr. George S. Dupuy representing Lloyds Agent for the underwriters and Mr. Cross representing the Union Diesel Engine Company builders of the engine.

3. The main propelling engine is a 6 cylinder (14"x19") four cycle Union Diesel rated at 560 H.P. at 325 R.P.M. Engine slowed October 26th; was dismantled, lower timing gears found cut and damaged and were renewed by Union Diesel service man and additional lubricating lines to gears and governor were installed. Engine again ready for operation on November 3rd (see log). On November 5th lower timing gears on vertical shaft were found damaged again and unfit for service and operation of engine was discontinued November 6th. Tug "Pacific Retriever" alongside November 6th and towed vessel to Craig Shipbuilding Company, Long Beach, California arriving 1:30 p.m. November 11, 1948.

4. Main engine was opened up for survey and examination revealed lower helical gears on vertical shaft destroyed. Vertical shaft checked in lathe and found satisfactory. Bearings found O.K., new gears and two new thrust bearings supplied and installed with new governor crosshead and new lubricating oil lines. Serious leaks found in lubricating oil coolers and in fresh water coolers which were dirty and clogged up. One lube oil cooler and two fresh water

coolers were removed from the ship and sent to service representatives of the manufacturers who cleaned, overhauled and tested the units in good order. These units were reinstalled and the engine closed up and adjusted. A leak was repaired around the fuel injection of No. 2 cylinder and considered satisfactory. Main engine crank shaft and thrust bearing were checked for alignment and found satisfactory. Main engine crank case was thoroughly cleaned and washed down and new lubricating oil supplied throughout the system.

5. It is my opinion that salt water leaks contaminated the lubricating oil to such extent that efficient lubrication of the gears was not possible and that faulty lubrication contributed to the failure of the gears.

6. On November 17th the vessel was given a suitable full power sea trial and performed to the satisfaction of all parties concerned. After the trial the new timing gears were examined and found satisfactory.

7. Vessel was scheduled to sail at 8:15 p.m. November 17, 1948 for Cristobal, C.S. where the Master will be given orders. Vessel is considered satisfactory to proceed on the voyage specified.

/s/ H. J. SUMMERS,
Surveyor.

Claimant's and Cross-Libelant's Exhibit "V" for identification, March 26, 1949.

Petitioner's Exhibit A-23 admitted April 14, 1948.

Mr. Howard: We have one further stipulation, if [1164] the Court please. This is with respect to the items in the claim of the cross libelant based upon the per diem operating expense of the Tanker Urania. Let it be stipulated that the reasonable per diem operating expense of the Tanker Urania during the periods involved in the libel and cross libel in 1948 was the sum of \$250.00 per day, made up of the following general items: crew's wages and overtime, hull and P.I. insurance, allowance for depreciation, victualing expense, expenditures of stores for the deck, engine and steward's department, and that no allowance for bunker fuel is included in said figure of \$250.00 per diem.

It is further stipulated that nothing is conceded by cross respondent as to the relationship of such per diem operating expense to the claims of the cross libelant for damages.

Mr. Hokanson: Subject to the continuing objection, it may be so stipulated.

The Court: You may proceed.

CRAIG WALLACE

called as a witness by and on behalf of respondent, having been first duly sworn, was examined and testified as follows: [1165]

Direct Examination

By Mr. Howard:

Q. Will you state your name and residence address, please?

(Testimony of Craig Wallace.)

A. My name is Craig Wallace, 1938 11th Avenue North, Seattle.

Q. What is your occupation?

A. I am manager of chartering for the Pacific Northwest for General Steamship Corporation, Ltd.

Q. Where is your principal office?

A. San Francisco.

Q. Where do you maintain your office?

A. Seattle.

Q. As manager of the chartering department, what do your duties involve, generally and briefly?

A. Very briefly, my duties are chartering—in other words, finding a cargo or finding a vessel to charter for a voyage or for a period, and also the operational details as an agent for those vessels when they happen to be in this port or elsewhere.

The Court: Where did you reside prior to your twentieth birthday, Mr. Wallace?

The Witness: New York City, sir.

The Court: Anywhere else?

The Witness: No, sir.

Q. Reverting now to the statement you made concerning [1166] operating details of the vessel, will you explain a little more in detail what that involves, please?

A. It does not involve ownership. It involves work on behalf of a shipowner when his vessel happens to be here and he happens to be elsewhere. It is a matter of entering the vessel, giving her necessary supplies, loading, discharging, doing certain repairs if he has no one to supervise it on his

(Testimony of Craig Wallace.)

behalf, clearing, and other details while the vessel happens to be in the port.

Q. How about expenses involved in connection with the operation of the vessel in port?

A. In the chartering end of my business, I have to have a general idea which is acceptable to owners and which I find from asking various owners of what a prime cost per day of various types of vessels would be which he might endeavor to charter.

Q. Speaking now of your services acting for owners in connection with the operating details of a vessel in the port, do you take care of the ordering of supplies as necessary?

A. I do, or Mr. Lund, who is with me.

Q. How long have you been engaged in that particular type of work?

A. I went into the shipping business in the fall of 1936. I would say about a year later I started in this [1167] particular field of agency work in port.

Q. How long have you been connected with the General Steamship Corporation?

A. I joined them in January of 1946.

Q. With what company were you connected prior to that time?

A. Funk Ede Company in New York.

Q. In your participation in that work, will you state whether or not you have any knowledge of the manner in which agency accounts are handled on various ports on the Pacific Coast?

A. Yes, I have some knowledge of that.